

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS
MELBOURNE

OFFICIAL
YEAR BOOK

OF THE

COMMONWEALTH OF AUSTRALIA

CONTAINING STATISTICS FOR THE PERIOD

1901-1912

OFFICIAL YEAR BOOK OF THE COMMONWEALTH.

AND COMPILED BY THE BUREAU OF CENSUS AND STATISTICS

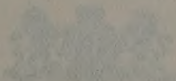
No. 6—1913

PUBLISHED UNDER THE AUTHORITY OF THE MINISTER FOR HOME AFFAIRS

BY

G. H. KINGS C.M.G.

FELLOW OF THE ROYAL STATISTICAL SOCIETY, AND THE
COMMONWEALTH STATISTICIAN



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PREFACE.
OFFICIAL

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CONTAINING AUTHORITATIVE STATISTICS FOR THE PERIOD

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AND CORRECTED STATISTICS FOR THE PERIOD 1788 TO 1900.

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FELLOW OF THE ROYAL STATISTICAL SOCIETY, ETC., ETC.
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PREFACE.

By the Constitution of the Commonwealth of Australia, the Commonwealth is empowered "to make laws for the peace, order, and good government of the Commonwealth, with respect to," *inter alia*, "Census and Statistics." In exercising the power so conferred, a "Census and Statistics Act" was passed in 1905, and in the year following the "Commonwealth Bureau of Census and Statistics" was created. The first Official Year Book was published early in 1908. The publication here presented is the sixth authoritative Year Book issued under the Federal Constitution.

This Year Book furnishes corrected statistics for the whole period of Australian settlement, viz., from 1788 to 1912. Wherever space has permitted, detailed statistics have been furnished for each year since Federation, viz., from 1901 to 1912. In the few instances where this has proved impracticable, reference will be necessary to Year Books Nos. 1 to 5. The inclusion, as stated, of the total available information in the more important branches of statistics enables this publication to be used wherever it is desired to make a comparative survey of the evolution of this portion of the British Empire. Not only are the results given for the Commonwealth as a whole, but also for each State therein.

The general arrangement of the publication, which has been widely commended, corresponds with that of previous issues, and is shewn in the synopsis on pp. xiii. to xxx. immediately following.

In addition, however, to what may be called purely statistical matter, each issue contains special articles dealing at length with some particular subject or subjects of more or less permanent interest. These cannot of course be repeated year after year, but usually a brief condensation is given in subsequent issues. Though many articles in Year Books Nos. 1 to 5 have been reduced to synopses or deleted, sufficient indication is given to enable the subject to be traced in previous issues.

The present issue of the Year Book contains several new features of interest. Among these may be mentioned the sections dealing with the Mineral Springs of

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Australia, and with Labour and Industrial Statistics. A branch of the Bureau has been organised to carry out investigations in connection with the latter subject. The section dealing with Population contains results for the Census of 1911. Additions have been made to the section on Pastoral Production, particulars of the development of the Local Wool Market and of the destination of the clips being given for the first time. The operations of the Maternity Allowance Act have been dealt with in the Miscellaneous Section, and a description of Native Australian Fodder Plants is also to be found in this section. The full text of the Commonwealth Constitution Act, and Amendments, appears on pages 13 to 24, while the Appendix contains the proposed alterations as submitted to the electors on 31st May, 1913.

Pages 1199 and 1200 give results of the Commonwealth elections and the voting on the referendums, so far as available, together with the names of the members of the new Ministry and new Parliament.

The subject matter throughout is dealt with, as far as possible, from the following points of view, viz.:—

(i.) The development of the individual States. (ii.) The progress of Australia as a whole from the earliest times. (iii.) The statistical comparison of Australia with other leading countries of the world.

A feature of this publication is the use made of maps and diagrams. As a rule, facts can be properly appreciated only by the use of graphs, and the progress of events, the characteristics of growth and decline, can in general be grasped much more readily graphically than numerically. The diagram or "graph" is a direct picture in which the relative magnitudes are preserved and by which instantaneous comparisons of a wide range of facts are made possible at a glance. The statistical data, however, are also given *in extenso* numerically.

The development of Australia has been in many instances very remarkable, and this could be shewn only by tables and graphs dating back to its beginning in 1788. In most cases accurate data are not available for years much before 1860. In such cases, therefore, it seemed sufficient at present to give continuous results from that year onwards.

The great mass of material embodied in each Year Book is always carefully examined, but it would be idle to hope that all error has been avoided. The Commonwealth Statistician desires to express appreciation of the opportunity afforded him of perfecting the matter of the Year Book, by those who have been kind enough to point out defects or make suggestions.

The corresponding years indicated in various sections of this book do not always necessarily refer to the same period, the year ending in some cases on 31st December, 30th June, or 31st March, etc. The precise period for which returns are given is indicated where necessary.

Recent information or returns which have come to hand since the various Sections were sent to press, may be found in the Appendix, p. 1197.

In conclusion, the Commonwealth Statistician desires to express his cordial thanks to the State Statisticians, to the responsible officers of the various Commonwealth and State Departments, and to others, who have kindly, and often at considerable trouble, supplied all desired information.

G. H. KNIBBS,

Commonwealth Statistician.

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,

28th June, 1913.

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CORRIGENDA.

Page 24. Note "1" in par. 51 should read "2."

„ 417. In first table, year 1912, for Queensland "£430,403" read "£430,420."

„ 944 (last line). For "Sir Elliston Macartney, K.C.M.G.," read "Sir W. G. Elliston-Macartney, K.C.M.G."

„ 1019. In table of Statutes, South Australia, omit "Defence of Workers 1909."

„ 1023. In the table shewing the number of Registered Factories, the figures relating to Western Australia are for the year 1911 and not for 1910 as stated in the Note.

STATISTICAL SUMMARY.

STATISTICAL SUMMARY FOR THE COMMONWEALTH, 1861-1911.

(Figures for 1912, where available, will be found in the Appendix, and, in some instances, have been incorporated in the succeeding sections.)

Heading.		Years.						
		1861.	1871.	1881.	1891.	1901.	1906.	1911.
Population	Males	669,373	928,918	1,247,059	1,736,617	2,004,836	2,126,730	2,377,920
	Females	498,776	771,970	1,059,677	1,504,368	1,820,077	1,964,755	2,190,787
	Total	1,168,149	1,700,888	2,306,736	3,240,985	3,824,913	4,091,485	4,568,707
Births ...	No.	48,908	63,625	80,004	110,187	102,945	107,890	132,193
	Rate	42.28	38.00	35.26	34.47	27.16	26.57	27.21
Deaths ...	No.	20,061	22,175	33,327	47,430	46,390	44,333	47,869
	Rate	17.34	13.24	14.69	14.84	12.22	10.92	10.66
Marriages	No.	10,000	11,623	17,244	23,862	27,753	30,410	39,482
	Rate	8.64	6.94	7.60	7.47	7.32	7.49	8.79
Agriculture—								
Wheat ...	Area, acs.	704,431	1,279,778	3,002,064	3,335,528	5,115,965	5,982,186	7,427,834
	Yld., bshl	10,236,549	11,917,741	21,443,862	25,675,265	38,561,619	66,421,359	71,636,347
	Av. "	14.53	9.31	7.14	7.70	7.54	11.10	9.64
Oats ...	Area, acs.	129,738	225,492	194,816	246,129	461,490	561,843	616,857
	Yld., bshl	3,090,982	4,251,630	4,795,897	5,726,256	9,789,854	13,612,007	9,561,771
	Av. "	23.82	18.85	24.62	23.27	21.22	23.39	15.50
Barley ...	Area, acs.	27,093	48,164	75,864	68,068	74,511	106,336	116,466
	Yld., bshl	507,879	726,158	1,353,380	1,178,560	1,519,819	2,248,432	2,056,836
	Av. "	18.75	15.08	17.84	17.31	20.40	21.14	17.68
Maize ...	Area, acs.	61,178	142,078	165,777	284,428	294,849	325,581	340,065
	Yld., bshl	1,799,862	4,576,635	5,726,266	9,261,922	7,034,786	10,172,254	9,039,855
	Av. "	29.18	32.21	34.54	32.56	23.86	31.24	26.58
Hay ...	Area, acs.	222,003	303,274	768,388	942,166	1,688,402	1,657,000	2,518,288
	Yld., tons	298,184	375,871	767,194	1,067,255	2,024,608	2,259,240	2,868,032
	Av. "	1.34	1.24	1.00	1.13	1.20	1.36	1.14
Potatoes*	Area, acs.	47,338	67,911	76,265	112,884	109,685	146,681	130,463
	Yld., tons	147,610	212,896	243,216	380,477	322,524	507,153	301,489
	Av. "	3.12	3.13	3.19	3.37	2.94	3.46	2.31
Sugar ...	Area, acs.	...	11,576	19,708	45,444	86,950	108,572	101,010
	Yld., tons	...	176,632	349,627	737,573	1,367,802	1,950,340	1,682,250
	Av. "	...	15.25	17.74	16.23	15.73	17.96	16.65
Vineyards	Area, acs.	7,010	16,253	14,570	48,882	63,677	62,557	60,602
	Wine, gal	495,000	2,104,000	1,488,000	3,535,000	5,816,087	5,940,943	4,975,147
Total value all agricultural production ... £		...	8,941,000	15,519,000	16,480,000	23,835,000	25,349,000	38,773,678
Pastoral, dairying, etc.		...	...	...	...	...	...	...
Live	(Sheep, No.	20,980,123	40,072,955	65,092,719	106,421,068	72,040,211	88,687,655	93,003,521
	Cattle "	3,846,554	4,277,228	8,010,991	11,119,112	8,491,428	9,349,409	11,828,954
	Stock	431,695	701,530	1,088,029	1,684,737	1,620,420	1,765,186	2,279,027
Pigs	Horses "	319,147	586,017	703,188	845,888	931,309	813,569	1,110,731
	Wool prod., lb. greasy	...	179,000,000	332,759,000	631,587,000	543,131,661	577,673,431	768,572,533
	Butter product'n, lbs.	...	...	...	47,433,564	101,671,066	159,934,617	211,577,745
Cheese	"	...	...	...	19,146,929	11,575,692	14,847,958	15,886,712
	Bacon and ham	...	...	...	...	84,020,629	41,165,914	53,264,652
Total estimated value of pastoral and dairying production ... £		...	20,736,000	29,538,000	39,256,000	36,890,000	59,000,000	69,832,000
Mineral production—								
Gold...	...	9,950,000	7,239,106	5,194,390	5,281,861	14,005,732	14,631,745	10,551,624
	Silver and lead ... £	5,702	29,488	31,139	37,717,825	2,367,687	3,623,912	3,021,284
	Copper ... £	458,758	824,111	673,786	367,745	2,238,590	3,344,744	2,564,278
Tin ...	...	11,937	18,597	1,145,603	560,750	432,576	1,509,488	1,209,973
	Zinc ... £	...	...	...	2,622	4,057	292,806	1,415,169
	Coal... £	228,935	325,747	636,746	1,908,028	2,602,770	2,669,948	3,929,673
Total value all mineral production ... £		10,657,533	8,484,728	7,813,523	12,093,837	22,043,104	26,643,007	23,480,211
Forestry production—								
Quantity of local timber sawn or hewn sup. ft.		†	†	†	†	452,131,252	429,166,603	591,645,786
Manufactories—†								
No. of factories ...	...	...	...	...	...	...	11,575	14,455
	Hands employed No.	...	...	...	...	...	228,560	311,772
	Wages paid ... £	...	...	...	...	...	...	27,531,876
Total value of output ... £		...	...	...	...	...	...	133,186,560
Value added in process of manufac. £		...	...	...	...	...	31,172,000	54,144,984

* Partly estimated 1861, 1871, and 1881. † Owing to variation in classification and lack of information effective comparison is impossible. ‡ Information not available.

STATISTICAL SUMMARY FOR THE COMMONWEALTH—(continued).

Heading.	Years.						
	1861.	1871.	1881.	1891.	1901.	1906.	1911.
Shipping—							
Oversea vessels { No. 2,466 2,748 3,284 3,778 4,028 4,155 4,174							
ent. & cleared ton. 1,149,476 1,312,642 2,549,364 4,726,307 6,541,991 7,966,658 9,984,801							
Commerce—							
Imports oversea £ 17,651,000 17,017,000 29,067,000 37,711,000 42,434,000 44,745,000 66,967,498							
" per head £ 15/5/2 10/3/3 12/16/2 11/16/0 11/3/11 11/0/4 14/18/3							
Exports oversea £ 17,413,000 21,725,000 27,528,000 36,043,000 49,696,000 69,738,000 79,482,258							
" per head £ 15/1/1 12/19/6 12/2/8 11/5/6 13/2/2 17/3/6 17/14/1							
Total oversea trade £ 35,064,000 38,742,000 56,595,000 73,754,000 92,130,000 114,483,000 146,449,746							
" per head £ 30/6/3 23/2/9 24/18/10 23/1/6 24/6/1 28/3/10 32/12/4							
Customs and excise duties ... £ 4,809,336 7,440,869 8,656,530 9,209,791 13,515,005							
" per head, £ 2/2/5 2/6/7 2/5/8 2/5/1 3/0/2							
Principal Oversea Exports—							
Wool { lbs. (greasy) 60,367,492 176,635,820 328,369,169 619,259,753 518,018,134 545,132,189 720,364,903							
£ 5,005,799 9,459,629 13,173,026 19,940,029 15,237,454 22,645,769 26,071,193							
Wheat { bushels 87,249 799,924 5,364,653 9,794,791 20,260,058 30,262,335 55,147,840							
£ 24,041 193,732 1,189,762 1,988,864 2,774,643 4,913,798 9,641,608							
Flour { tons 7,602 12,988 49,549 33,363 96,814 166,881 175,891							
£ 113,172 170,415 519,635 328,423 589,604 1,216,849 1,391,599							
Butter { lbs. 664,160 1,812,688 1,296,758 4,289,494 34,607,397 75,802,856 101,732,136							
£ 21,699 45,813 39,383 206,868 1,451,168 3,240,063 4,637,362							
Skins and hides... £ 180,292 100,123 316,878 873,695 1,250,938 2,752,711 3,227,236							
Tallow ... £ 148,201 914,278 644,149 571,069 677,745 878,699 1,936,599							
Meats ... £ 37,575 566,780 362,965 460,894 2,611,244 2,373,650 4,307,273							
Timber (undressed) £ 32,367 42,586 116,117 38,448 731,301 979,530 1,023,960							
Gold ... £ 9,957,056 7,184,833 6,445,365 5,703,532 14,315,741 16,875,456 19,045,766							
Silver and lead ... £ 4,237 37,891 57,954 1,932,278 2,250,253 2,958,258 3,224,720							
Copper ... £ 351,718 598,538 676,515 1,619,145 3,069,306 2,949,443							
Coal... .. £ 63,061 134,355 361,081 645,972 986,957 894,002 900,622							
Railways—							
Lgh. of line open, mls 905 970 3,832 9,541 12,577 13,887 16,079							
Capital cost ... £ 6,654,516 19,269,786 42,741,350 99,764,090 123,587,000 134,972,000 152,596,000							
Gross revenue ... £ 318,823 1,102,650 3,910,122 8,654,085 11,038,000 12,808,000 17,848,000							
Working expenses £ 234,040 608,332 2,141,735 5,630,182 7,149,000 7,541,000 11,054,000							
Per cent. of work'g expenses on earnings % 73.41 55.17 54.77 65.06 64.76 58.87 61.94							
Postal—							
Letters and postcards dealt with ... No. 12,844,000 24,382,000 67,640,000 157,297,000 220,853,000 317,049,000 453,885,000							
" " per head .. 11.13 14.54 29.61 49.07 58.26 78.09 101.1							
Newspapers dealt with ... No. 9,603,000 13,336,000 38,063,000 85,280,000 102,727,000 103,793,000 139,604,000							
" " per head .. 8.32 7.95 16.66 26.61 27.10 25.56 31.1							
Banks of Issue—							
Note circulation £ 2,970,357 2,456,487 3,978,711 4,417,269 3,406,175 3,360,075 £ 876,428							
Coin & bullion held £ 4,662,415 6,168,869 9,108,243 16,712,923 19,737,572 21,508,275 30,024,225							
Advances ... £ 18,261,129 26,039,573 57,732,824 129,741,583 89,167,499 92,246,968 116,769,133							
Deposits ... £ 13,817,435 21,856,959 53,849,455 98,345,338 90,965,530 107,675,919 147,103,081							
Savings Banks—							
Number of depositors 27,877 100,713 250,071 614,741 964,553 1,185,608 1,600,112							
Total deposits ... £ 1,320,739 3,193,285 7,854,481 15,536,592 30,882,645 38,266,219 59,393,682							
Aver. per depositor £ 47/7/7 31/14/2 31/8/2 25/5/6 32/0/4 32/5/10 37/2/4							
" " head of population ... £ 0/18/8 1/18/9 3/10/5 4/18/7 8/4/0 9/9/10 13/8/5							
State Schools—							
Number of schools 1,864 2,502 4,494 6,231 7,012 7,308 8,060							
Teachers ... No. 2,471 4,641 9,028 12,564 14,500 15,802 16,971							
Enrolment ... 106,049 236,710 432,320 561,153 638,478 609,592 638,850							
Aver. attendance .. 73,446 137,767 255,143 350,773 450,246 442,440 463,709							

§ Decrease due to issue of Australian notes.

CHRONOLOGICAL TABLE.

CHRONOLOGICAL TABLE OF CHIEF EVENTS SINCE THE ESTABLISHMENT OF SETTLEMENT IN AUSTRALIA.

NOTE.—The Government was centralised in Sydney, New South Wales, up to 1825, when Tasmania (Van Diemen's Land) was made a separate colony. In the Table, the names now borne by the States serve to indicate the localities.

Year.

- 1788 N.S.W.—Arrival of "First Fleet" at Botany Bay. Land in vicinity being found unsuitable for settlement, the expedition moved to Sydney Cove (now Port Jackson). Formal possession of Sydney Cove, Port Jackson, taken by Captain Phillip on 26th January. Formal proclamation of colony on 7th February. Population, 1030. Branch settlement established at Norfolk Island. French navigator La Pérouse visits Botany Bay.
- 1789 N.S.W.—First wheat harvest at Parramatta, near Sydney. Discovery of Hawkesbury River. Outbreak of small-pox amongst aborigines.
- 1790 N.S.W.—"Second Fleet" reached Port Jackson. Landing of the New South Wales Corps. Severe suffering through lack of provisions. First Circumnavigation of Australia by Lieut. Ball.
- 1791 N.S.W.—1st Exploration Map of Australia published. Arrival of "Third Fleet." Territorial seal brought by King. First grape vines planted.
- 1792 N.S.W.—Visit of *Philadelphia*, first foreign trading vessel. Population, 4213.
- 1793 N.S.W.—First free immigrants arrived in the *Bellona*. First Australian Church opened at Sydney. Tas.—D'Entrecasteaux discovered the Derwent River.
- 1794 N.S.W.—Establishment of Settlement at Hawkesbury River.
- 1795 N.S.W.—Erection of the first printing press at Sydney. Descendants of strayed cattle discovered at Cowpastures, Nepean River.
- 1796 N.S.W.—First Australian Theatre opened at Sydney. Coal discovered by fishermen at Newcastle.
- 1797 N.S.W.—Introduction of merino sheep from Cape of Good Hope.
- 1798 Tas.—Tasmania proved an island by voyage of Bass and Flinders.
- 1800 N.S.W.—First export of coal. First Custom House in Australia established at Sydney. Flinders' Charts published. Population, 6508.
- 1801 N.S.W.—First colonial manufacture of blankets and linen. First issue of copper coin.
- 1802 Vic.—Discovery of Port Phillip by Lieut. Murray. S.A.—Discovery of Spencer's and St. Vincent Gulf by Flinders. Q'land.—Discovery of Port Curtis and Port Bowen by Flinders.
- 1803 N.S.W.—First Australian wool taken to England by Capt. Macarthur. Issue of "The Sydney Gazette," first Australian newspaper. Vic.—Attempted colonisation of Port Phillip by Collins. Discovery of Yarra by Grimes. Tas.—First settlement formed at Risdon by Lieut. Bowen.
- 1804 N.S.W.—Insurrection of convicts at Castle Hill. Vic.—Abandonment of settlement at Port Phillip. Tas.—Foundation of settlement at Hobart by Collins, and at Yorktown by Colonel Paterson.
- 1805 N.S.W.—First extensive sheep farm established at Camden by Capt. Macarthur. Portion of settlers from Norfolk Island transferred to Tasmania.
- 1806 N.S.W.—Shortage of provisions, and floods. Tas.—Settlement at Launceston.
- 1807 N.S.W.—Final shipment of convicts from Norfolk Island. First shipment of merchantable wool (245 lbs.) to England.
- 1808 N.S.W.—Deposition of Governor Bligh.
- 1810 N.S.W.—First post-office established at Sydney. First Race Meeting in Australia at Hyde Park, Sydney. Population, 11,590. Tas.—First Tasmanian newspaper printed.
- 1813 N.S.W.—Passage across Blue Mountains discovered by Wentworth, Lawson, and Blaxland. Macquarie River discovered by Evans.

- 1814 N.S.W.—Australia, previously known as “New Holland,” received present name on recommendation of Flinders. Creation of Civil Courts. New Zealand proclaimed a dependency of N.S.W.
- 1815 N.S.W.—Town of Bathurst founded by Governor Macquarie. First steam engine in Australia erected at Sydney. Lachlan River discovered by Evans. Tas.—Arrival of first immigrant ship with free settlers. First export of wheat to Sydney. Port Davey and Macquarie Harbour discovered by Captain Kelly.
- 1816 N.S.W.—Botanic Garden formed at Sydney.
- 1817 N.S.W.—Oxley’s first exploration inland. Discovery of Lakes George and Bathurst and the Goulburn Plains by Meehan and Hume. First bank in Australia opened at Sydney. Tas.—Great prosperity in wool and whaling industries.
- 1818 N.S.W.—Cessation of free immigration. Oxley discovers Liverpool Plains, and the Peel, Hastings, and Manning Rivers. Port Essington discovered by Captain King.
- 1819 N.S.W.—Opening of first Australian Savings Bank at Sydney.
- 1820 N.S.W.—Foundation of Campbelltown. Clyde River discovered by Lieut. Johnson. Tas.—First importation of pure merino sheep.
- 1821 N.S.W.—Foundation of Philosophical (now Royal) Society. Population, 35,610. Tas.—Establishment of penal settlement at Macquarie Harbour. First Circuit Court held at Hobart.
- 1822 N.S.W.—Formation of Agricultural Society of N.S.W.
- 1823 N.S.W.—First Australian Constitution. Discovery of gold at Fish River by Assistant-Surveyor McBrien. Arrival in Sydney of Dr. John Dunmore Lang. Qld.—Oxley discovers Brisbane River.
- 1824 N.S.W.—Becomes a Crown Colony. Executive Council formed. Establishment of Supreme Court at Sydney, and introduction of trial by jury. First Australian Enactment (Currency Bill) passed by the Parliament at Sydney. Proclamation of freedom of the press. First land regulations. First manufacture of sugar. Hume and Hovell’s overland expedition to the south. Vic.—Hume and Hovell, journeying overland from Sydney, arrive at Corio Bay. Qld.—Penal settlement founded at Moreton Bay (Brisbane). Fort Dundas Settlement formed at Melville Island, N. Terr.
- 1825 Tas.—Proclamation of Independence of Van Dieman’s Land (Tasmania) and appointment of a nominated Legislative Council for the new colony.
- 1826 N.S.W.—Illawarra founded by Captain Bishop. Vic.—Settlement at Corinella, Western Port, formed by Captain Wright. W.A.—Military Settlement founded at King George’s Sound, Albany, by Major Lockyer.
- 1827 N.S.W.—Colony becomes self-supporting. Feverish speculation in land and stock. Qld.—Darling Downs and the Condamine River discovered by Allan Cunningham. Fort Wellington established at Raffles Bay, N. Terr. Tas.—Copper ore discovered at Macquarie Harbour.
- 1828 N.S.W.—Second Constitution. First Census. Sturt’s expedition down Darling River. Cotton first grown in Sydney Botanical Gardens. Gas first used at Sydney. Richmond and Clarence Rivers discovered by Captain Rous. Vic.—Abandonment of settlement at Western Port. Qld.—Cunningham discovers a route from Brisbane to the Darling Downs, and explores Brisbane River to its source. Tas.—First land sales.
- 1829 N.S.W.—Sturt’s expedition down Murrumbidgee River. New South Wales Act proclaimed. All English law, so far as circumstances of the Colony allowed, came into force. W.A.—Foundation of settlement at Swan River, under command of Lieut.-Governor Stirling. Perth also founded.
- 1830 N.S.W.—Insurrection of convicts at Bathurst. Sturt, voyaging down Murrumbidgee and Murray Rivers, arrives at Lake Alexandrina. Qld.—Murder of Captain Logan by convicts at Brisbane. W.A.—First Executive Council appointed. Tas.—Trouble with natives. Black line organised to force aborigines into Tasman’s Peninsula, but failed. Between 1830 and 1835, however, George Robinson, by friendly suasion, succeeded in gathering the small remnant of aborigines (203) into settlement at Flinders Island.

- 1831 N.S.W.—Crown lands first disposed of by public competition. Mitchell's explorations north of Liverpool Plains. Arrival at Sydney of first steamer, *Sophia Jane*, from England. S.S. *Surprise*, first steamship in Australia, launched at Sydney. First coal shipped from Australian Agricultural Company's workings at Newcastle, N.S.W. First assisted immigration to N.S.W. S.A.—Adelaide District discovered by Captain Barker. Murder of Barker by aborigines at Lake Alexandrina. Wakefield's first colonisation committee. W.A.—Appointment of Executive and Legislative Council. First newspaper—"Fremantle Observer." Lord Ripon's land regulations in N.S.W., W.A., and Tas.
- 1832 N.S.W.—Savings Bank of N.S.W. established.
- 1833 N.S.W.—First School of Arts established at Sydney.
- 1834 N.S.W.—First settlement at Twofold Bay. Vic.—Settlement formed at Portland Bay by Henty Bros. Qld.—Leichhardt reached Gulf of Carpentaria. S.A.—Formation of the South Australian Association. Imperial Act colonisation of S.A. W.A.—Severe reprisals against natives at Pinjarrah.
- 1835 N.S.W.—Establishment of dépôt at Fort Bourke on the Darling River, by Mitchell. Vic.—John Batman's arrival at Port Phillip; makes treaty with the natives for 600,000 acres of land; claim afterwards disallowed by Imperial Government. John Pascoe Fawkner founds Melbourne on site previously selected by Batman.
- 1836 N.S.W.—Fall of snow in Sydney. Mitchell's overland journey from Sydney to Cape Northumberland, Vic., and discovery of "Australia Felix." "Squatting" formally recognised. Vic.—Proclamation of Port Phillip district as open for settlement. Captain Lonsdale first Resident Magistrate. S.A.—Founding of settlement at Adelaide under Governor Hindmarsh.
- 1837 N.S.W.—Appointment in London of Select Committee on Transportation. Heavy snowfall near Sydney. Vic.—Melbourne planned and named by Governor Bourke. First Victorian post-office established in Melbourne. First sale of Crown lands in Melbourne. First overlanders from Sydney arrived at Port Phillip. S.A.—Adelaide planned by Captain Light. First newspaper published at Adelaide. First sale of Crown lands in Adelaide.
- 1838 N.S.W.—Discontinuance of assignment of convicts. Drought and failure of crops. Frenzied speculation. Vic.—First Victorian paper published at Melbourne. Qld.—Settlement of German missionaries at Brisbane. S.A.—"Overlanding" of cattle from Sydney to Adelaide along the Murray route by Hawden and Bonney. Settlement at Port Essington, Northern Territory, formed by Captain Bremer. W.A.—Glenelg River discovered by Captain Grey.
- 1839 N.S.W.—Finding of gold at Vale of Clwydd by Count Strzelecki. Vic.—Appointment of Mr. C. J. LaTrobe as Superintendent Port Phillip district. S.A.—Lake Torrens discovered by Eyre. Port Darwin, Northern Territory, discovered by Captain Stokes. W.A.—Murchison River discovered by Captain Grey.
- 1840 N.S.W.—Abolition of transportation to New South Wales. Land regulations—proceeds of sales to be applied to payment for public works and expenditure on immigration. Foundation of viticultural industry. Monetary crisis. Vic.—Determination of northern boundary. Colonists desire separation from New South Wales. Qld.—Breaking up of penal settlements and throwing open of Moreton Bay district to free settlers. S.A.—Incorporation of Adelaide. Eyre begins his overland journey from Adelaide to King George's Sound. Tas.—Visit of the *Erebus* and *Terror* to Hobart. Dr. Hooker investigates the island flora.
- 1841 N.S.W.—Gold found near Hartley by Rev. W. B. Clarke. Separation of New Zealand. W.A.—Completion of Eyre's overland journey from Adelaide to King George's Sound. Tas.—Renewal of transportation.
- 1842 N.S.W.—Incorporation of Sydney. Vic.—Incorporation of Melbourne. S.A.—Discovery of copper at Kapunda.
- 1843 N.S.W.—First Representative Constitution. First manufacture of tweed. Financial crisis. Qld.—Moreton Bay granted legislative representation. Tas.—Agitation against further introduction of convicts.

- 1844 S.A.—Sturt's last expedition inland. Qld.—Leichhardt's expedition from Condamine River to Port Essington, Northern Territory. Arrived following year.
- 1845 N.S.W.—Mitchell's explorations on the Barcoo. Qld.—Explorations by Mitchell and Kennedy. S.A.—Discovery of the Burra copper deposits. Sturt discovered Cooper's Creek. W.A.—First steam vessel (*H.M.S. Driver*) visited Fremantle.
- 1846 N.S.W.—Mr. Gladstone proposed to revive transportation. Initiation of meat preserving. Qld.—Foundation of settlement at Port Curtis. S.A.—Proclamation of North Australia. W.A.—Organisation of first mining company. Foundation of New Norcia Mission.
- 1847 N.S.W.—Crown Land Leases Act. Opening of iron smelting works near Berrima. Overland mail established between Sydney and Adelaide. Vic.—Melbourne created a City by Royal Letters Patent. Qld.—Explorations by Leichhardt, Burnett and Kennedy. W.A.—Issue of regulations for leasing Crown lands. First export of guano.
- 1848 N.S.W.—Attempts to revive transportation. Influx of Chinese. Vic.—Earl Grey returned as Melbourne member of the Legislative Council. Qld.—Leichhardt's last journey. Kennedy speared by the blacks at York Peninsula. Chinese brought in as shepherds. W.A.—Copper and lead discovered in the Champion Bay district by the Messrs. Gregory.
- 1849 N.S.W.—Indignation of colonists at arrival of convict ship *Hashemy*. Exodus of population to goldfields of California. Vic.—Outburst of indignation at arrival of *Randolph* with convicts. Qld.—Assignment of convicts per *Hashemy* to squatters on Darling Downs. W.A.—Commencement of transportation to Western Australia.
- 1850 N.S.W.—Final abolition of transportation. First sod of first Australian railway turned at Sydney. Vic.—Gold discovered at Clunes by Hon. W. Campbell. Representative government granted. S.A.—Representative government granted. W.A.—Pearl oysters found by Lieut. Helpman at Saturday Island Shoal. Tas.—Representative government granted. Discovery of coal at the Don and Mersey.
- 1851 N.S.W.—Payable gold discovered by Hargraves, at Lewis Ponds and Summerhill Creeks. Telegraph first used. Vic.—Separation of Port Phillip—erected into independent colony under the name of Victoria. Discovery of gold in various localities. "Black Thursday," Feb. 6th, a day of intense heat, when several persons died and a vast amount of damage to property was occasioned by fires. Qld.—Agitation for separation from New South Wales. S.A.—Financial depression. Tas.—Serious exodus of population to goldfields on mainland. W.A.—Proclamation of Legislative Council Act.
- 1852 N.S.W.—Destruction of Gundagai by flood—77 lives lost. Arrival of the *Chusan*, first P. and O. mail steamer from England. S.A.—First steamer ascends the Murray River to the junction with the Darling. Tas.—Meeting of first elective Council protests against transportation. Payable gold discovered at The Nook, near Fingal, and at Nine Mile Springs.
- 1853 Tas.—Abolition of transportation.
- 1854 N.S.W.—Russian war-scare and volunteer movement. Vic.—Opening of first Australian railway—Flinders Street to Port Melbourne. Riots on Ballarat goldfields. Storming of the Eureka Stockade, Dec. 3rd.
- 1855 N.S.W.—Opening of railway—Sydney to Parramatta. Introduction of responsible Government. Vic.—Proclamation of Constitution. Qld.—Gregory's expedition in search of Leichhardt. Tas.—Responsible government.
- 1856 N.S.W.—First elective Parliament. Pitcairn Islanders placed on Norfolk Island, which was placed under jurisdiction of Governor of New South Wales. Vic.—First Parliament under responsible government. S.A.—Responsible government. Tas.—First Parliament under responsible government. W.A.—A. C. Gregory's expedition in search of Leichhardt.
- 1857 N.S.W.—Heavy floods. Wreck of the *Dunbar* (119 lives lost), and *Catherine Adamson* (21 lives lost), at Sydney Heads. Select Committee on Federation. Vic.—Manhood suffrage. S.A.—First Parliament under responsible government. Exploration by Babbage and Warburton. Passage of Torrens' Real Property Act.

- 1858 N.S.W.—Establishment of manhood suffrage and vote by ballot. Telegraphic communication between Sydney, Melbourne and Adelaide. S.A.—Stuart's explorations. Qld.—The Canoona gold rush.
- 1859 Qld.—Proclamation of Queensland as separate colony. Tas.—First submarine cable, via Circular Head and King Is., to Cape Otway.
- 1860 N.S.W.—Disastrous floods on the Shoalhaven and at Araluen. Vic.—Burke and Wills left Melbourne on their journey across Continent. Qld.—First Parliament under responsible government. S.A.—Copper discoveries at Wallaroo and Moonta.
- 1861 N.S.W.—Anti-Chinese riots at Lambing Flat and Burrangong goldfields. Opening of first tramway in Sydney—cars drawn by horses. Robertson's Land Acts. Messrs. Parkes and Dalley proceed to London as emigration lecturers. Regulation of Chinese immigration. Vic.—Conference of Statisticians, Melbourne. Burke and Wills perish at Cooper's Creek, near Innamincka, S.A. W.A.—Exploration of F. Gregory in the North-west.
- 1862 N.S.W.—Raid by bushrangers on the Lachlan gold escort (£14,000 taken). Abolition of State aid to religion. Real Property Act. Vic.—C. Gavan Duffy's Land Act. Qld.—McKinlay's explorations. Heavy floods on Fitzroy River. S.A.—Stuart crosses the Continent from south to north. W.A.—Severe floods—damage to property, £30,000. First export of pearl-shell.
- 1863 N.S.W.—Bathurst and Canowindra "held up" by bushranger Gilbert. Vic.—Inter-colonial conference at Melbourne. S.A.—Taking over of the Northern Territory. W.A.—Initiation of settlement in the North-west district.
- 1864 N.S.W.—Frequent outrages by bushrangers. Qld.—First railway begun. First sugar made from Queensland cane. Opening of first railway. W.A.—Messrs. Panton, Harding and Goldwyer, murdered by natives. Tas.—First successful shipment of English salmon ova.
- 1865 N.S.W.—Destruction by fire of St. Mary's Cathedral, Sydney.
- 1866 N.S.W.—Passage of Public Schools Act of (Sir) Henry Parkes. Vic.—Political deadlock. Qld.—Financial crisis. S.A.—Introduction of camels for exploration, etc.
- 1867 Vic.—Imposition of protective tariff. Qld.—Discovery of gold at Gympie.
- 1868 N.S.W.—Attempted assassination of the Duke of Edinburgh at Clontarf, near Sydney. Qld.—Passage of Act to regulate island labour traffic. W.A.—Arrival of the *Hougomont*, last convict ship. Tas.—First sod of first railway (Launceston and Western) turned by Duke of Edinburgh.
- 1869 N.S.W.—Establishment of Eskbank Iron Company. Vic.—Reduction of property qualification for members and electors of Legislative Council. W.A.—Opening of first telegraph line, from Perth to Fremantle. Tas.—Opening of second cable.
- 1870 N.S.W.—Opening of Intercolonial Exhibition at Sydney in celebration of centenary of Cook's landing in Australia. Withdrawal of Imperial troops. Vic.—Intercolonial Congress at Melbourne. S.A.—Commencement of trans-continental telegraph. W.A.—Meeting of first Legislative Council under Responsible Government.
- 1871 N.S.W.—Permanent military force raised. Vic.—Increase of protective duties. Qld.—Foundation of Queensland National Bank. W.A.—Passage of Elementary Education Act. Forrest's explorations. Tas.—Discovery of tin at Mount Bischoff. Launceston-Western railway opened for traffic.
- 1872 N.S.W.—International Exhibition at Sydney. Death of W. C. Wentworth. Qld.—Discovery of tin at Stanthorpe, copper at Mt. Perry, coal at Wide Bay, gold at the Palmer. S.A.—Cable from Java to Port Darwin. Completion of transcontinental telegraph line. W.A.—Cyclonic storms—destruction of town of Roeburne. Tas.—Completion of direct telegraphic communication with England.
- 1873 N.S.W.—Intercolonial Conference at Sydney. First volunteer encampment. Inauguration of mail service with San Francisco. W.A.—Warburton crosses from transcontinental telegraph line to head of De Grey River.

- 1874 N.S.W.—Triennial Parliaments Act passed. Intercolonial Conference. Qld.—Dalrymple's discoveries on north-eastern seaboard. S.A.—Adelaide University founded. W.A.—Explorations by E. Giles. John and Alexander Forrest arrived at Overland Telegraph from Murchison.
Fiji Islands ceded to Great Britain.
- 1875 Qld.—Transfer of Port Albany Settlement to Thursday Island. S.A.—Wreck of the *Gothenburg*—Judge Wearing and other well-known Adelaide citizens drowned. Education Act passed. Explorations by Giles, Gosse, and Warburton. Tas.—Conference of Statisticians, Hobart.
- 1876 N.S.W.—Completion of cable—Sydney (La Perouse) to Wellington (Wakapuaka). Vic.—Members of Legislative Assembly increased to 86. W.A.—Violent gale at Exmouth Gulf, number of pearling vessels wrecked, 69 lives lost. Giles crosses colony from east to west. Tas.—Death of Truganini, last representative of Tasmanian aborigines.
- 1877 Vic.—Deadlock on question of payment to members. W.A.—Opening of telegraphic communication with South Australia. Tas.—Discovery of rich gold-bearing quartz reef at Beaconsfield.
- 1878 N.S.W.—Seamen's strike. Vic.—Visit to England of Victorian delegation re alteration of Victorian Constitution. "Black Wednesday"—wholesale dismissal of civil servants. Qld.—Restriction of Chinese immigration.
- 1879 N.S.W.—First artesian bore at Killara. International Exhibition at Garden Palace, Sydney. First steam tramway. First issue of silver coin from Mint. W.A.—Celebration of 50th anniversary of foundation of colony. A. Forrest's explorations in the Kimberley district, and discovery of the Fitzroy pastoral country.
- 1880 N.S.W.—Public Instruction Act passed. Sydney streets partially wood-paved. Vic.—Opening of first Victorian International Exhibition at Melbourne. Federal Conference at Melbourne and Sydney.
- 1881 N.S.W.—Further restrictions on Chinese immigration. Women admitted as students at University. Vic.—Reduction of property qualification for members and electors of Legislative Council, number of members increased to 42. W.A.—Cyclone near Roeburne wrecks number of pearling vessels. On the Ashburton, 1000 sheep destroyed by cyclone.
First simultaneous Australian Census, population 2,250,194. Visit to Australia of T.R.H. Prince Albert Victor and Prince George of Wales.
- 1882 N.S.W.—Garden Palace destroyed by fire. W.A.—Nugget of gold found between Roeburne and Cossack.
- 1883 N.S.W.—Discovery of silver at Broken Hill. Completion of railway between New South Wales and Victoria. Qld.—Annexation of New Guinea—repudiated by Imperial authorities.
Federal Conference held at Sydney. Federal Council created.
- 1884 N.S.W.—Land legislation restricting sales by auction. Vic.—Appointment of First Public Service Board. W.A.—Stockdale's explorations.
Federation Bill passed in Victoria. Similar measure rejected in New South Wales. British protectorate declared over New Guinea.
- 1885 N.S.W.—Military contingent sent to the Soudan. Opening of the Broken Hill Proprietary Silver Mines. Qld.—Agitation for division of the colony. W.A.—Gold found by prospectors on the Margaret and Ord Rivers in the Kimberley district. Tas.—Silver-lead discovered at Mount Zeehan.
- 1886 N.S.W.—Industrial depression. Wreck of the *Ly-ee-Moon*, *Coringamite*, and *Helen Nicol*. S.A.—Celebration of jubilee of foundation of colony. W.A.—Proclamation of Kimberley goldfields. Tas.—Discovery of gold and copper at Mount Lyell.
First session of Federal Council met at Hobart on the 26th January.
- 1887 N.S.W.—Disaster at Bulli coal mine (81 lives lost). Peat's Ferry (Hawkesbury River) railway accident. S.A.—International Exhibition at Adelaide. W.A.—Cyclone destroyed nearly the whole pearling fleet off the Ninety-Mile Beach—200 lives lost. Gold discovered at Yilgarn and Southern Cross.
Australasian Conference in London. Australasian Naval Defence Force Act passed.

- 1888 N.S.W.—Destructive bush fires. Centennial celebrations. Restrictive legislation against Chinese. Imposition of poll-tax of £100. Strike of coal-miners at Newcastle. Vic.—Second Victorian International Exhibition held at Melbourne. Members of Legislative Council increased to 48, and of Assembly to 95. Qld.—Railway communication opened between Sydney and Brisbane. W.A.—Favenc's explorations.
Centenary of first settlement in Australia. Conference of Australian Ministers at Sydney to consider question of Chinese immigration. First meeting of the Australasian Association for the Advancement of Science held in Sydney. Imperial Defence Act passed.
- 1889 N.S.W.—Destructive floods, Hunter River. Qld.—Direct railway communication established between Brisbane and Adelaide. W.A.—Framing of new Constitution.
- 1890 N.S.W.—Strike at Broken Hill. Maritime and shearers' strikes. Payment of members of Parliament. Destructive bush fires. Qld.—Wreck of the *Quetta*—146 lives lost. Floods and hurricanes. Industrial depression. W.A.—Granting of responsible government. Tas.—Opening of University.
Meeting at Melbourne of Australasian Federation Conference. Pre-censal Conference of Statisticians at Hobart.
- 1891 N.S.W.—Election to Legislative Assembly of 35 Labour members. Arrival of Australian Auxiliary Squadron. Collapse of several building societies. Cessation of assisted immigration. Death of Sir John Robertson. W.A.—Discovery of gold on the Murchison.
Federal Convention in Sydney, draft bill framed and adopted. Second simultaneous Australian census. Population, 3,174,392.
- 1892 N.S.W.—Broken Hill miners' strike. Run on Government Savings Bank. Opening of Women's College, Sydney University. Vic.—Suspension of Railway Commissioners. W.A.—Discovery of gold by Messrs. Bayley and Ford at Coolgardie.
- 1893 N.S.W.—Departure by the *Royal Tar* of colonists for "New Australia." Electoral Act—"One man one vote." Direct communication, Sydney to Vancouver, established. Financial crisis, chiefly affecting the eastern States.
- 1894 N.S.W.—Shearers' strike. S.A.—Adult Suffrage Bill assented to. Industrial depression.
- 1895 N.S.W.—Crown Lands Act of 1895. Death of Governor Sir R. Duff. Free-trade tariff. Land and income taxes.
Conference of Premiers at Hobart *re* Federation.
- 1896 N.S.W.—Death of Sir Henry Parkes. Re-organisation of Public Service. People's Federal Convention at Bathurst. S.A.—Departure of Calvert expedition.
- 1897 S.A.—Floods and storms at Adelaide. Death of Sir Thomas Elder. Earthquake and hurricane in Northern Territory. Town of Palmerston destroyed.
- 1897-8 Sessions of Federal Convention at Adelaide, Sydney and Melbourne.
- 1898 N.S.W.—First surplus of wheat for export.
Draft Federal Constitution Bill submitted to electors in Victoria, New South Wales, South Australia, and Tasmania. Requisite statutory number of votes not obtained in New South Wales.
- 1899 N.S.W.—First contingent of Australian troops to assist the British army in South Africa.
Conference of Premiers in Melbourne to consider amendments in Federal Constitution Bill. Referendum—Bill accepted by New South Wales, Victoria, Queensland, South Australia, and Tasmania.
- 1900 N.S.W.—Old-age Pensions instituted. W.A.—Agitation for separation by gold-fields. Strike of railway engine drivers and firemen.
Contingents of naval troops from N.S.W., Vic. and S.A. to assist in China.
Commonwealth Constitution Act receives Royal Assent, 9th July. Mr. (afterwards Sir) Edmund Barton forms first Federal Ministry.
- 1901 Proclamation of the Commonwealth at Sydney, and swearing-in of Ministry. Opening of first Federal Parliament at Melbourne by the Duke of Cornwall and York, who visited each State of the Commonwealth. Simultaneous Australasian Census—population of the Commonwealth, 3,773,801.

- 1902 N.S.W.—Disastrous explosion at Mount Kembla Colliery—95 lives lost. Women's franchise. Jubilee of Sydney University. S.A.—Reduction of number of members of both Houses of Parliament. W.A.—Opening of pumping station at Northam in connection with Goldfields water supply.
- 1903 Vic.—Railway Strike (Enginemen). W.A.—Opening of Coolgardie and Kalgoorlie water supply.
Inauguration of the Federal High Court. Conference of Statisticians in Melbourne.
- 1904 N.S.W.—Reduction of members of Legislative Assembly from 125 to 90.
- 1905 N.S.W.—Re-introduction of assisted immigration.
- 1906 Wireless telegraphy installed between Queenscliff, Vic., and Devonport, Tas. Consummation of Commonwealth interstate Free-trade by cessation of special Western Australian tariff. Conference of Statisticians of Australian States and New Zealand, under the presidency of the Commonwealth Statistician. Papua taken over by Commonwealth.
- 1907 N.S.W.—Strike of coal-miners in Newcastle district. Vic.—Opening of first Australian Exhibition of Women's Work in Melbourne. Bakers' strike, Melbourne. Opening of telephone, Sydney to Melbourne.
Imperial Conference in London—Australia represented by the Hon. A. Deakin, Prime Minister. Introduction of new tariff in Federal Parliament. Allowance to Federal members of Parliament increased from £400 to £600.
- 1908 N.S.W.—Tramway employees' strike, Sydney. Fire at Newcastle—damage to property £150,000. Vic.—Railway accident at Braybrook Junction (Sunshine)—44 killed, 412 injured; compensation paid, £126,000.
Yass-Canberra chosen as site of Federal Capital. Interstate Premiers Conference at Melbourne. Visit of American Fleet to Australia.
- 1909 N.S.W.—Miners' strikes at Broken Hill and Newcastle. Arrest of strike leaders at Newcastle. Qld.—Opening of Queensland University. S.A.—Foundering of *Clan Ranald* in St. Vincent's Gulf—40 drowned. W.A.—Cyclone at Broome.
Imperial Defence Conference in London—Commonwealth sends three representatives. Death at Parliament House of Sir Frederick Holder, Speaker of the House of Representatives. Commonwealth orders two destroyers and one first-class cruiser for fleet unit. Visit of Lord Kitchener to report and advise on Commonwealth military defence. Loss of the *Waratah* with 300 passengers and crew.
- 1910 Vic.—Railway accident at Richmond—9 killed, over 400 injured; compensation paid £129,000. S.A.—Strike of transport workers at Adelaide. W.A.—Cyclone at Broome—several pearling vessels wrecked, 3 whites and many coloured fishermen drowned. Strike of tramway employees at Perth. Wreck of the *Pericles* off Cape Leeuwin.
Rt. Hon. Sir G. H. Reid takes up duty as High Commissioner for the Commonwealth of Australia in London. Referendum on financial relations between the Commonwealth and the States. Proclamation taking over Yass-Canberra (in New South Wales) as site for Federal Capital. Penny Postage. Visit of Scottish Agricultural Commission, Dutch squadron visits Australia. Arrival of the *Yarra* and *Parramatta*, first vessels of Australian navy. Australian Notes Act empowers Federal Treasurer to issue notes of various denominations. Admiral Sir R. Henderson visits Australia to advise on naval defence. First issue of Commonwealth notes.
- 1911 First Federal Census population of the Commonwealth, 4,455,005. Federal referenda relating to Monopolies and Industrial Legislation—proposals rejected. Introduction of compulsory military training. Launch of Commonwealth destroyer *Warrego* at Sydney. Establishment of penny postage to all parts of British Empire.
- 1912 Opening of Commonwealth Bank. First payments of Maternity Bonus. Turning of first sod at Port Augusta of Trans-Australian Railway (Port Augusta and Kalgoorlie). Resignation of leadership of Liberal party by Mr. Alfred Deakin, and appointment of Mr. Joseph Cook in his stead. Appointment of Administrators to Northern Territory and Federal Capital Territory. Opening of Western Australian University. Gift of £1,000,000 to charities by Mrs. Walter Hall, Sydney, N.S.W. Numerous industrial disturbances: Brisbane tramway employees' and general strike; strike of miners at the Wonthaggi State coal mines.

OFFICIAL YEAR BOOK

OF THE

COMMONWEALTH OF AUSTRALIA, 1912,

AND EARLIER YEARS.

SECTION I.

STATISTICAL ORGANISATION AND SOURCES OF INFORMATION.

§ 1. Introduction.

1. **Development of Australian Statistics.**—In the first issue of the Commonwealth Official Year Book (No. 1, 1901-1907), an account was given of the origin and development of Australian Statistics; *vide* pp. 1 to 16 therein. Owing to considerations of space, however, this matter was considerably curtailed in succeeding Year Books, and appears in No. 4 on pp. 1 to 4. In No. 5 and in the present issue a still further curtailment has been made in order to make room for new matter.

Briefly, it may be stated that to the "Blue Books" compiled in Australia for the Home Government, there succeeded, under Responsible Government, the statistics which each of the departments prepared for itself, State statistical departments being organised principally as collecting agencies of official and general information.

Absence of co-ordination in collection and compilation, due to the organisation, independently, of the various States bureaux, caused difficulties in so combining State statistics as to get a satisfactory statistic for Australia as a whole, and various conferences of State Statisticians did not completely rectify the divergencies that arose.

(i.) *Creation of the Commonwealth Bureau of Census and Statistics.* Constitutionally, matters relating to "Census and Statistics" belong to the Commonwealth, and in 1906, under the authority of the Census and Statistics Act of 1905, providing for the taking of the Census and the collecting of general statistics, the Commonwealth Bureau of Census and Statistics was created. A conference of statistical representatives of Australian States and New Zealand, under the presidency of the Commonwealth Statistician, met in November and December, 1906. For a more or less complete presentation of the affairs of the Commonwealth and of its constituent parts, various desiderata were recognised, and a series of resolutions adopted by the conference. Identity of categories, simultaneity and identity in methods of collection, and uniformity in compilation, were the main features desired. A resumé of the resolutions of this conference is given in Year Book No. 1, pp. 12-16.

(ii.) *Organisation of the Commonwealth Bureau of Census and Statistics.*—In the organisation of the Bureau, while all classes of work may at any time be relegated to any officer, certain fields of activity are attended to mainly by the officers mentioned

hereunder, who, subject to the general direction of the Statistician, supervise the work of the different branches:—

JOHN STONHAM, M.A. (Sydney). Chief Compiler and General Administration.
 H. NRY SPONDLY (Zurich University). Vital Statistics and Cognate Matters.
 CHARLES HENRY WICKENS, A.I.A. Supervisor of Census.
 EDWARD TANNOCH MCPHEE. Trade and Customs Statistics and Commerce.
 FREDERICK DALGLISH ROSSITER, M.A. (Melbourne). Defence, General Control of Library, etc.
 GERALD LIGHTFOOT, M.A. (Cambridge), B. at Law. Industrial and Social Statistics.
 F. W. BARFORD, M.A. (Oxford), A.I.A. Financial Statistics.

2. Sources of Information.—Statistical information is furnished (i.) by the State Statistical Bureaux, as a result of direct demand, or through the police and special collectors; (ii.) by Commonwealth and State Departments (see lists of publications in § 2 *infra*); (iii.) in respect of returns of Trade, Customs and Excise, by the Trade and Customs Department; (iv.) by scientific and technical experts, specially requisitioned to write on particular subjects; (v.) by State Statisticians, as officers duly constituted under the Commonwealth Census and Statistics Act; (vi.) and by information supplied compulsorily, on the Commonwealth Statistician's demand.

3. Maintenance of Secrecy.—Under no circumstance can information supplied to a statistical office be used against the individual supplying it. All statistical enquiries are strictly impersonal, and the affairs of individuals or individual businesses are never disclosed. No other Government Department can make use of the Statistical departments in order to acquire detailed information otherwise unavailable.

4. Accuracy Essential.—The importance of accurate statistical information is emphasised, and the making of untrue statements is heavily penalised.

§ 2. Statistical Publications of Australia.

1. Introductory.—The official statistical publications of Australia may be divided bibliographically into two main divisions, viz.:—(1) Commonwealth publications dealing both individually and collectively with the several States of the Commonwealth, and (2) State publications dealing with individual States only. Besides these there are a large number of publications issued regularly, which, though not wholly statistical, necessarily contain a considerable amount of statistical information. These are included in the lists given hereunder, which are revised to 30th November, 1912.

2. Commonwealth Publications.—Commonwealth publications may be grouped under two heads, viz.:—(i.) Publications issued by the Commonwealth Statistician, and (ii.) Departmental Reports and Papers.

(i.) *Publications issued by the Commonwealth Statistician.* The following is a list of statistical publications issued from the Commonwealth Bureau of Census and Statistics since its inauguration and up to 31st December, 1912:—

Census Bulletins—

- No. 1. Population of States and Territories.
- No. 2. Persons of Non-European Race.
- No. 3. Ages.
- No. 4. Population of Counties, Local Government Areas, etc.
- No. 5. Population of Electoral Divisions, Provinces, and Districts.
- No. 6. Birthplaces.
- No. 7. Length of Residence in Australia.

- No. 8. Religions.
- No. 9. Education.
- No. 10. Blindness and Deafmutism.
- No. 11. Schooling.
- No. 12. Conjugal Condition.
- No. 13. Localities.
- No. 14. Mortality Investigation.
- No. 15. Families.

Finance—Bulletin No. 1, 1901 to 1907.

Bulletin No. 2, 1901 to 1908.

Bulletin No. 3, 1901 to 1909.

Bulletin No. 4, 1901 to 1910.

Bulletin No. 5, 1901 to 1911.

Labour and Industrial Statistics—Explanatory Memorandum on the Proposed Scheme.

Inquiry into the Cost of Living in Australia, 1910-11.

Prices, Price Indexes and Cost of Living in Australia.

Monthly Summary of Australian Statistics—Bulletins Nos. 1 to 11, issued monthly commencing January, 1912.

Population and Vital Statistics—Bulletin No. 1, Determination of the Population of Australia, 1901 to 1906.

Bulletin No. 2, Commonwealth Demography, 1901 to 1906.

Bulletin No. 7, Commonwealth Demography, 1901 to 1907.

Bulletin No. 13, Commonwealth Demography, 1901 to 1908.

Bulletin No. 19, Commonwealth Demography, 1901 to 1909.

Bulletin No. 28, Commonwealth Demography, 1901 to 1910.

Bulletin No. 8, Vital Statistics for year 1907.

Bulletin No. 14, Vital Statistics for year 1908.

Bulletin No. 20, Vital Statistics for year 1909.

Bulletin No. 25, Vital Statistics for year 1910.*

Bulletin No. 29, Commonwealth Demography, 1911 and previous years.

Bulletins Nos. 3 to 6, 9 to 12, 15 to 18, 21 to 24, 26 and 27, Vital Statistics, issued quarterly, 1907 to 1910, and first and second quarters of 1911.†

The Nomenclature of Diseases and of Causes of Death, 1907. New Edition, 1910.

Production—Bulletin No. 1, 1901 to 1906.

Bulletin No. 2, 1901 to 1907.

Bulletin No. 3, 1901 to 1908.

Bulletin No. 4, 1901 to 1909.

Bulletin No. 5, 1901 to 1910.

Professional Papers—The Classification of Diseases and Causes of Death, from the standpoint of the Statistician.

Census Taking—C. H. Wickens, A.I.A.

On the Influence of Infantile Mortality on Birthrate (2 papers).

On the Statistical Opportunities of the Medical Profession.

Tuberculosis Duration Frequency Curves, and the number of existing cases ultimately fatal.

The Problems of Statistics.

The Evolution and Significance of the Census.

Studies in Statistical Representation—On the nature of the curve.

$$y = Ax^m e^{nx^p}$$

* Annual Vital Statistics now published as part of Commonwealth Demography.

† The publication of quarterly Vital Statistics has been discontinued.

Studies in Statistical Representation—Statistical Applications of the Fourier series.

The First Commonwealth Census.

Mathematical Analysis of Climatological Physiology.

Suicide in Australia.

An Extension of the Principle Underlying Woolhouse's Method of Graduation—C. H. Wickens, A.I.A.

Railway Statistics—Report on the Desirability of Improved Statistics of Government Railways in Australia, February, 1909.

Shipping—Shipping and Oversea Migration for 1906.

Shipping and Oversea Migration for 1907.

Shipping and Oversea Migration for 1908.

Shipping and Oversea Migration for 1909.

Shipping and Oversea Migration for 1910.

Shipping and Oversea Migration for 1911.

Social Insurance—Report to the Hon. the Minister of Trade and Customs.

Superannuation for the Commonwealth Public Service—Report to the Hon. the Minister of Home Affairs.

The Australian Commonwealth—Its Resources and Production, 1908. New Edition, 1910. New Edition, 1912.

Trade and Customs—Trade, and Customs and Excise Revenue for 1906.

Trade, and Customs and Excise Revenue for 1907.

Trade, and Customs and Excise Revenue for 1908.

Trade, and Customs and Excise Revenue for 1909.

Trade, and Customs and Excise Revenue for 1910.

Trade, and Customs and Excise Revenue for 1911.

Trade, Shipping, and Oversea Migration—Bulletins Nos. 1 to 60, issued monthly, from January, 1907, to December, 1911 (now discontinued; issued as part of Monthly Summary of Australian Statistics).

Transport and Communication—Bulletin No. 1, 1901 to 1906.

Bulletin No. 2, 1901 to 1908.

Bulletin No. 3, 1901 to 1909.

Bulletin No. 4, 1901 to 1910.

Bulletin No. 5, 1901 to 1911.

Social Statistics—Bulletin No. 1, 1907.

Bulletin No. 2, 1908.

Bulletin No. 3, 1909.

Bulletin No. 4, 1910.

Official Year Book of the Commonwealth—No. 1, 1901 to 1907.

No. 2, 1901 to 1908.

No. 3, 1901 to 1909.

No. 4, 1901 to 1910.

No. 5, 1901 to 1911.

(ii.) *Commonwealth Parliamentary and Departmental Reports and Papers.* The following are the principal official reports and papers containing statistical matter which have been issued since the inauguration of the Commonwealth:—

Arbitration Court: Returns of Awards, Conferences, Agreements, etc.

Australia for Farmers, 1910.

Australia: The Wheat Country.

Australian Notes: Correspondence relating to the Gold Reserve in respect of the issue of.

Budget, 1901-2 to 1912-13.

Chief of the General Staff: Memo. *re* Defence.

Commonwealth Law and Arbitration Reports.

Commonwealth Meteorologist. Bulletins of Climate and Meteorology of Australia; Rainfall Maps of Australia; Professional Papers and Charts (various); Monthly Meteorological Reports, commencing January, 1910.

Commonwealth Military Journal, issued monthly, commencing April, 1911.

Contract Immigrants Act and Immigration Restriction Act: Returns for Years 1902 to 1910.

Defence: Reports on Progress of Universal Training (Naval and Military) to 30th June, 1912.

Director-General of Cadets: Reports to 30th June, 1910.

Director of Naval Forces: Report for 1906.

Electoral Act: Commissioners' Special Reports.

Electoral Statistical Returns *re* Referendum of 26th April, 1911.

Electoral Statistics of Commonwealth Elections: 1903, 1906, and 1910.

Estimates: 1901-2 to 1912-13. Also Supplementary Estimates.

Fisheries: Reports of the Director on Fishing Experiments carried out by the F.I.S. "Endeavour."

Fisheries: Zoological Results of Fishing Experiments. Parts 1 to 3.

Fleet Unit: Memorandum *re* arrangement for providing and training personnel.

Handbooks of the Territory of Papua.

High Commissioner of the Commonwealth: Reports, 1910 and 1911.

Home Affairs: Schedule of the Department, compiled from the Minister's Digests. Nos. 1 to 10.

Inspector-General of Military Forces: Reports, 1905 to 1907. Extracts from Report of 1910. Do., 1911. Do., 1912.

Invalid and Old-Age Pensions: Statements *re*.

Land Tax Assessment Act: First Annual Report of Commissioner, 1910-11.

Manufactures Encouragement Act: Return of Bounties Paid.

Memorandum on Australian Military Defence and its progress since Federation.

Memorandum on the Defence of Australia, by Field-Marshal Lord Kitchener.

Military and Naval Forces Lists. Also Cadet Forces Lists.

Military Board: Reports, 1905 and 1906.

Naturalisation Act 1903: Returns.

Naval Defence of Australia: Memorandum by Admiral Sir Reginald Henderson.

Northern Territory: Bulletins, Nos. 1 to 3.

Northern Territory: Report of the Government Resident for 1910 (previous reports to Government of South Australia).

Northern Territory: Report of the Acting Administrator for 1911.

Northern Territory: Reports, various.

Organisation and Distribution of the Military Forces.

Papua: Reports for 1904-5 to 1910-11, and returns to accompany same.

Papua: Reports, various.

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.

Patents Statistics, 1904 to 1912.

Postal Services Royal Commission.

Postmaster-General's Department: First Annual Report, 1910.

Postmaster-General's Department: Statement of Business transacted and details of Receipts and Expenditure, 1907, 1908 and 1909.

Press Cable Subsidy: Amount paid, etc.

Public Service Commissioner: Reports, 1901-4 and 1905 to 1910, and Public Service Lists, 1903 to 1911-12.

Quarantine: Reports.

Railways: The Gauges of Australian Railways and their Unification.

Railways: Reports, various, *re* Gauges of Australian Railways, etc.

Representation Act 1905: Returns.

Royal Commission on Tasmanian Customs Leakage.

Social Insurance: Report by the Hon. Sir John Cockburn on the Hague Conference of 1910.

Sugar: Statistics, 1901-2 to 1910-11 *re* White and Black Labour, Production, Duties, Excise, Bounties, etc.

Tariff Guide: 1903 to 1912. Also Tariff Schedules.

Trade and Customs Returns, 1903 to 1905; compiled by the New South Wales Government Statistician for the Minister for Customs.

Treasurer's Statements and Reports of Auditor-General, 1901-2 to 1909-10.

Treasury Notes: Amounts issued to the respective Banks of the Commonwealth.

Treasury Statements of Receipts and Expenditure, issued quarterly in the *Commonwealth Gazette*.

Tropical Diseases: Report by Dr. Breinl.

3. State Publications.—The chief statistical publications of each State issued since Federation may be most conveniently grouped under the following heads, viz.:—(a) Publications issued by the Government Statist, (b) parliamentary and departmental reports and papers, and (c) reports and statements of local and public bodies. These are set out hereunder for each State:—

(i) **New South Wales.**—(a) *Publications by Government Statistician*:—

The Wealth and Progress of New South Wales, 1900-1.

The Seven Colonies of Australasia, 1901-2.

A Statistical Account of Australia and New Zealand, 1902-3, 1903-4.

The Official Year Book of New South Wales, 1904-5 to 1910-11.

Six States of Australia and New Zealand (annual statistics), 1901 to 1905.

Monthly Statistical Bulletin, 1905 to August 1912.

Statistical Registers, 1901 to 1910, and 1911 (parts).

Census of New South Wales, 1901.

Vital Statistics (annual), 1901 to 1911; and monthly issues to September, 1912.

Agricultural and Live-stock Statistics, 1901 to 1911.

Statistical View of the Progress of New South Wales during 50 years, 1856 to 1906.

Friendly Societies' Experience, New South Wales, 1900-1908.

Comparative Legislation relating to the Industrial Classes.

Population of New South Wales and movements of population between New

South Wales and other Countries, quarterly since December, 1911.

Annual Reports on Agricultural, Dairying, and Pastoral Industries, on Manu-
factories and Works, and on Value of Production.

(b) *Departmental Papers*:—

Annual Reports of—

Aborigines

Australian Museum

Board of Public Health

Chief Commissioner of Railways

Chief Medical Officer

Comptroller-General of Prisons

Department of Agriculture

Department of Crown Lands

Department of Mines

Department of Police

Department of Public Works

Director of Botanical Gardens and Domain

Director of Labour

Factories and Shops Act; Minimum Wage
Act; Early Closing Acts; Shearers'
Accommodation Act, etc.

Fisheries Board

Forestry Department

Government Bureau of Microbiology

Government Savings Bank

Immigration and Tourist Bureau

Industrial Schools

Inspector-General of Insane

Labour Commissioners

Leprosy (Board of Health)

Minister of Public Instruction

National Art Gallery	Registrar-General
National Park Trust	Savings Bank
Pharmacy Board	State Children's Relief Board
Public Disaster Relief Fund	State Debt Commissioners
Public Library	Superintendent of Carpenterian Reformat'ry
Public Service Board	Technological Museums
Registrar of Friendly Societies, Building Societies, and Trade Unions	University of Sydney
Public Service Lists.	Western Land Board.
The Estimates of Revenue and Expenditure.	
Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.	
Trade Reports, various.	
Public Accounts and Report of the Auditor-General.	
Treasurer's Financial Statement, and Papers to accompany.	
General Election 1910. Double Voting. Synopsis of the Voting.	
The New South Wales Industrial Gazette.	
State Contracts for the Public Service.	
Agricultural Gazette (monthly).	
Records of the Geological Survey.	
Quarterly Return of Gold Yields.	

(c) *Reports and Statements of Local Bodies:—*

Annual Statements of Municipalities	Metropolitan Board of Water Supply and Sewerage
Fire Commissioners (formerly Fire Brigades Board)	Sydney Harbour Trust Commissioners
Hospitals	Town Clerk of the City of Sydney.
Hunter District Water Supply and Sewerage Board	

(ii.) *Victoria.—(a) Publications by the Government Statist:—*

Statistical Registers, 1901 to 1910, and 1911 (parts).
 The Victorian Year Books, 1902 to 1910-11, and 1911-12 (parts).
 Quarterly Statistical Abstracts, 1904 to 31st March, 1912.
 Quarterly Returns of Vital Statistics, 1901 to 30th June, 1912.
 Monthly Returns of Oversea Imports and Exports, 1901 to June, 1912.
 Statistics of Manufactories, Works, etc., 1901 to 1910.
 Australasian Statistics, 1901-2, with Summaries for Previous Years.
 The First Fifty Years of Responsible Government in Victoria, 1856 to 1906.
 Census of Victoria, 1901.
 Annual Reports on Agricultural, Viticultural, Dairying, and Pastoral Industries, and on Value of Production.
 Annual Report on Friendly Societies.
 Annual Report on Trade Unions.

(b) *Departmental Papers:—*

Annual Reports of—	
Board for the Protection of Aborigines	Council of Judges
Board of Public Health	Department of Agriculture
Board of Visitors, Observatory	Department of Crown Lands and Survey
Chief Engineer for Railway Construction	Government Astronomer
Chief Inspector of Explosives	General Manager of State Coal Mines
Chief Inspector of Factories, Workrooms and Shops	Indeterminate Sentences Board
Coal Miners' Accidents Relief Fund	Inspector of Charitable Institutions
Conservator of Forests	Inspector-General of the Insane
	Inspector of Inebriates' Institutions

STATISTICAL PUBLICATIONS OF AUSTRALIA.

Inspector of Neglected Children and Reformatory Schools	Public Service Commissioner
Inspector-General of Penal Establishments and Gaols	Registrar of Friendly Societies
Inspector-General of Savings Banks	Railways Commissioners
Land Purchase and Management Board	Secretary for Mines
Licenses Reduction Board	State Rivers and Water Supply Commission
Marine Board of Victoria	Trustees of the Public Library, Museums, and National Gallery
Minister of Public Instruction	Vice-Chancellor of Melbourne University.

Public Service List.

Accounts of the Trustees of Agricultural Colleges and the Council of Agricultural Education.

The Budget.

Returns under the Banks and Currency Act 1890, the Companies Act 1890, and the Electric Light and Power Act 1896.

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.

Statement of Expenditure under the Constitution Statute.

The Estimates of Revenue and Expenditure.

Treasurer's Statement and Report of the Auditor-General.

Determinations of Wages Boards.

Agricultural Journal (monthly).

Register of Teachers and Register of Schools.

Quarterly Returns of Yield of Goldfields.

Memoirs and Bulletins of the Geological Survey.

(c) *Reports of Local Bodies:—*

Annual Reports of the Melbourne Harbour Trust Commission	Geelong Municipal Waterworks Trust Hospitals
Annual Reports of the Fire Brigades Board	Statement of Accounts of the Melbourne and Metropolitan Board of Works.
Annual Statements of Municipal and Shire Councils	

(iii.) *Queensland.—(a) Publications by Government Statistician:—*

The Queensland Official Year Book, 1901.

The Census of 1901.

A.B.C. of Queensland Statistics, 1905 to 1912.

Vital Statistics (annual), 1901 to 1910; and monthly issues to December, 1911.

Statistical Registers, 1901 to 1910 and 1911 (parts).

Stock List, 1901 to 1910.

Annual Reports on Agricultural, Dairying, and Pastoral Statistics.

* (b) *Departmental Papers:—*

Annual Reports of the—

Agent-General	Department of Public Lands
Benevolent Asylums	Department of Public Works
Bureau of Sugar Experiment Stations	Director of Forests
Chief Protector of Aborigines	Director of Labour and Chief Inspector of Factories and Shops
Chief Inspector of Machinery & Scaffolding	Engineer for Harbours and Rivers
Commissioner for Public Health	Govt. Life Insurance and Annuity Business
Commissioner of Income Tax	Government Resident at Thursday Island
Commissioner of Police	Hydraulic Engineer on Water Supply
Commissioner for Railways	Immigration Agent
Comptroller-General of Prisons	Inspector of Hospitals for the Insane
Curator of Intestate Estates	Inspector of Orphanages
Department of Agriculture and Stock	

Institute of Tropical Medicine
 Manager of the Government Savings Bank
 Marine Department
 Medical Inspector of Schools
 Medical Officers of Hospitals
 Officer in Charge, Government Relief
 Official Trustee in Insolvency
 Public Service Board
 Registrar of Friendly Societies, Building
 Societies, and Trade Unions

Secretary for Public Instruction
 State Children's Department
 Trustees of the Agricultural Bank
 Trustees of the National Art Gallery
 Trustees of the Public Library
 Under-Secretary for Mines
 University of Queensland
 Workers' Dwelling Board

Blue Book.

Public Service Lists.

The Estimates of Revenue and Expenditure.

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.

Reports of the Auditor-General.

Treasurer's Financial Statement and Tables relating thereto.

Determinations of Wages Boards.

Reports of the Geological Survey.

Monthly Reports on Mining, Crown Lands, etc.

(c) *Reports and Statements of Local Bodies :—*

Brisbane Board of Waterworks.

Bundaberg Harbour Board.

Engineer for Harbours and Rivers.

Hospitals.

Annual Statements of Municipalities.

Metropolitan Water and Sewerage Board.

(iv.) **South Australia.**—(a) *Publications by the Under-Secretary and Government Statist :—*

Statistical Registers, 1901 to 1910, and 1911 (parts).

Monthly Returns of Births and Deaths, 1901 to September, 1912.

Monthly Returns of Vital Statistics, 1901 to October, 1912.

The Census of 1901.

Blue Book.

Statistical Summary of South Australia from its foundation, 1836 to 1910.

Annual Reports on Manufactories and Works, Live Stock, Wheat Harvest, Agricultural and Viticultural Statistics.

(b) *Departmental Papers :—*

Annual Reports of the—

Actuary on Friendly Societies (1900-1904)

Agent-General

Audit-Commissioner

Chief Inspector of Factories

Chief Inspector of Fisheries

Chief Inspector of Oyster Fisheries

Chief Inspector of Stock

Commissioner of Police

Commissioner of Railways

Commissioners of the National Park

Conservator of Forests

Department of Agriculture

Department of Public Works

Destitute Board

Gaols and Prisons

Government Astronomer

Government Resident of Northern Territory to 1909 (subsequent reports to Commonwealth Government)

Governors of the Public Library, Museum, and Art Gallery

Hospital for the Insane

Marine Board

Minister for Agriculture

Minister for Education

Public Service Superannuation Board

Registrar-General of Births, Deaths, and Marriages

Registrar of Trade Unions

State Children's Council

Surveyor-General

Trustees of the Savings Bank.

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.

The Estimates of Revenue and Expenditure.

Financial Statement of the Treasurer and appendices relating thereto.

Determinations of Wages Boards.

Mining Operations: Half-Yearly Reviews, 1904 to 1912.

Records and Reports of Geological Survey.

Journal of the Department of Agriculture (monthly).

(c) *Reports and Statements of Local Bodies:—*

Hospitals.

Schools of Mines and Industries.

Fire Brigades Boards.

Municipal Tramways Trust.

Municipalities.

(v.) **Western Australia.**—(a) *Publications by Government Statistician:—*

The Census of 1901.

Statistical Registers, 1901 to 1910 and 1911 (parts).

Monthly Statistical Abstracts, 1901 to August, 1912.

Year Books of Western Australia, 1900-03, 1902-4, 1905 (part).

Quarterly and Annual Reports on Population and Vital Statistics.

Monthly Return of Vital Statistics.

Crop and Live Stock Returns.

Blue Book.

Statistical View of 83 years' progress in Western Australia, 1829 to 1911.

Comparative Statistics, 1890 to 1911.

Annual Reports on Agricultural, etc., Statistics.

(b) *Departmental Papers:—*

Annual Reports of the—

Aborigines Department

Agent-General

Agricultural Bank

Art Galleries

Chief Inspector of Explosives

Chief Inspector of Factories

Chief Inspector of Fisheries

Commissioner of Police

Commissioner of Railways

Commissioner of Taxation

Comptroller-General of Prisons

Department of Agriculture

Department of Lands and Surveys

Department of Mines

Department of Public Works

Department of Woods and Forests

Education Department

Geological Survey

Government Analyst

Government Astronomer

Government Labour Bureau

Government Savings Bank

Harbour and Light Department

Inspector-General of Insane

Lands Titles Department

Museum and Art Gallery

Public Library

Principal Medical Officer on Medical, Health, Factories, Early Closing, Vaccination and Quarantine.

Public Service Commissioner

Registrar of Friendly Societies

Registrar of Friendly Societies in connection with Industrial Conciliation and Arbitration, and Trade Unions

Stock Department

Superintendent of Charities and Inspector of Industrial and Reformatory Schools

Surveyor-General

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.

The Estimates of Revenue and Expenditure.

Public Accounts and Report of the Auditor-General.

Reports of proceedings before Boards of Conciliation and Court of Arbitration.
 Bulletins of the Department of State Medicine and Public Health.
 Bulletins of the Geological Survey.
 Government Savings Bank, Comparative Return (Monthly).

(c) *Reports and Statements of Local Bodies :—*

Cemetery Boards	Metropolitan Waterworks Board
Fire Brigades	Municipalities, Road Boards, and Boards of Health
Fremantle Harbour Trust Commissioners	Public Hospitals
Fremantle Municipal Tramways and Electric Lighting Board	Waterworks Boards (country).

(vi.) *Tasmania. (a) Publications by Government Statistician :—*

The Census of 1901.
 Statistical Registers, 1901 to 1910-11.
 Reports on Vital Statistics and Migration (annual), 1901 to 1911 ; and monthly issues to September, 1912.
 Reports on Agricultural and Live Stock Statistics, 1901 to 1911-12.
 Statistical Summaries, 1901 to 1910-11.
 Gold Yield for 1908 and previous 10 years.
 Annual Reports on Agricultural, etc., Statistics.

(b) *Departmental Papers :—*

Annual Reports of the—

Agent-General	General Manager of Government Railways
Agricultural Bank of Tasmania	Hobart and Launceston Gaols
Charitable Grants Department	Inspector of Machinery
Chief Inspector of Factories	Lands and Survey Department
Chief Inspector of Stock	Museum and Botanical Gardens
Commissioner of Taxes	Police Department
Department of Agriculture	Public Library
Department of Education	Public Service Board
Department of Mines	Recorder of Titles
Department of Neglected Children	Registrar of Friendly Societies and Trade Unions
Department of Public Health	Savings Bank
Engineer-in-Chief of Public Works	Secretary for Mines
Explosives Department	University of Tasmania
Fire Brigade Board	

The Budget.

The Estimates of Revenue and Expenditure.

Parliamentary Papers (miscellaneous) ; Reports of Committees, Commissions, Conferences, etc.

Public Debts Sinking Fund.

Report of the Auditor-General.

Financial Statement of the Treasurer.

Wages Boards Determinations.

Geological Survey Bulletins.

Progress of the Mineral Industry (quarterly).

(c) *Reports and Statements of Local Bodies :—*

Country Libraries	Industrial Schools
Harbour Trusts	Life Assurance Societies
Hobart Drainage Board	Marine Boards
Hospitals	Municipalities.

§ 3. Bibliography of Recent General Works on Australia.

While not exhaustive, it is hoped that the accompanying list of works dealing with Australia and Australian affairs generally, may prove of some service. The list refers to works published since the year 1901.

- CLARK, A. T. *Australian Constitutional Law*. Melbourne, 1905.
- CLARK, VICTOR S. *The Labour Movement in Australasia*. London, 1906.
- D'AUNET, B. *L'Aurore Australe*. Melbourne, 1905; Paris, 1907.
- FAVENC, E. *Explorers of Australia*. Melbourne, 1908.
- FOX, FRANK. *Peeps at Many Lands*. Australia. London, 1911.
- FRASER, J. FOSTER. *Australia: The Making of a Nation*. London, 1910.
- GORDON AND GOTCH. *Australian Handbook*. Annual. London.
- GREGORY, J. M. *The Dead Heart of Australia*. London, 1906. *Australia and New Zealand* (in Stanford's Compendium of Geography and Travel). London, 1907.
- GREY, J. G. *Australasia, Old and New*. London, 1901.
- HAWKESWORTH, A. *Australasian Sheep and Wool*. 3rd Edition. Sydney, 1911.
- HOWITT, A. W. *The Native Tribes of South East Australia*. London, 1904.
- INGLIS, GORDON. *Sport and Pastime in Australia*. London, 1912.
- JOHNS, F. *Annual*. 1912.
- JOHNS, F. *Notable Australians*. 1906. 2nd Edition. Adelaide and London, 1908.
- JOSE, A. W. *History of Australasia*.
- KEENAN, J. J. *Commonwealth of Australia Inaugural Celebrations*. Sydney, 1907.
- MAIDEN, J. H. *Sir Joseph Banks, the Father of Australia*. Sydney, 1909.
- METIN, A. *Le Socialisme sans doctrines: la question ouvrière et la question agraire en Australie et Nouvelle Zélande*. Paris, 1901.
- MOORE, W. H. *The Constitution of the Commonwealth of Australia*. London, 1902. Second Edition. Melbourne, 1910.
- MORGAN, B. H. *The Trade and Industry of Australia*. London, 1909.
- NELSON, W. *Foster Fraser's Fallacies*. Sydney, 1910.
- PRATT, E. A. *The State Railway Muddle in Australia*. London, 1912.
- PULSFORD, E. *Commerce and the Empire*. London, 1903.
- QUICK, HON. SIR J., AND GARRAN, R. R. *The Annotated Constitution of the Australian Commonwealth*. Sydney, 1901.
- QUICK, HON. SIR J., AND GROOM, HON. L. E. *The Judicial Power of the Commonwealth*. Melbourne, 1904.
- REEVES, W. P. *State Experiments in Australia and New Zealand*. 2 vols. London, 1902.
- ROGERS, J. D. *Australia* (in Lucas's Historical Geography of the British Colonies). Oxford, 1907.
- ROWLAND, P. F. *The New Nation*. London, 1903.
- RUSDEN, G. W. *History of Australia*. 3 vols. Melbourne, 1908.
- SCHACHNER, R. *Australien in Politik, Wirtschaft, Kultur*. Bd. I. Jena, 1909; do. Bd. II Jena, 1911.
- SCOTT, ERNEST. *Terre Napoléon: A History of French Explorations and Projects in Australia*. London, 1910.
- SCOTT, R. F. *The Voyage of the Discovery*. 2 vols. London, 1905.
- SEARCY, A. *In Australian Tropics*. London, 1907.
- SCOTTISH AGRICULTURAL COMMISSION'S REPORT. *Australia: Its Land, Conditions, and Prospects*. Edinburgh, 1911.
- SPENCE, W. G. *Australia's Awakening*. Sydney, 1909.
- SPENCER, W. B., AND GILLEN, F. J. *The Northern Tribes of Central Australia*. London, 1904.
- ST. LEDGER, A. *Australian Socialism*. London 1909.
- SUTHERLAND, A. *The Australasian Live Stock Manual*. 2nd Edition. Melbourne and Sydney, 1903.
- TURNER, H. G. *First Decade of the Australian Commonwealth*. London, 1911.
- VOSSION, L. *L'Australie Nouvelle et son avenir*. Paris, 1902.
- WISE, B. R. *Commonwealth of Australia*. London, 1909.
- YEAR BOOK OF AUSTRALIA. Annual. Sydney.

SECTION II.

DISCOVERY, COLONISATION, AND FEDERATION OF AUSTRALIA.

§ 1. Early Knowledge of Australia.

A brief, though fairly comprehensive, account of the discovery and early knowledge of Australia was given in Year Book No. 1 (pp. 44 to 51). This account appeared in a condensed form in Year Books Nos. 2, 3, and 4. Bibliographical references to the subject were also given in Year Book No. 1 (p. 49). Exigencies of space prevent the inclusion of any further reference to this subject in the present issue.

§ 2. The Taking Possession of Australia.

Reference was made to the more important facts relating to the taking possession and annexation of Australia in each of the first four issues of this book: See preferably Year Book No. 4 (pp. 15 and 16). In so far as the annexation of the eastern parts is concerned, a full historical account of the period may be found in the "Historical Records of New South Wales," Vol. I., parts 1 and 2. For an account of the annexation of Western Australia, reference may be made to the West Australian Year Book 1905, Part 1.

§ 3. The Creation of the Several Colonies.

1. **Introduction.**—A historical summary of the facts relating to the creation of the several colonies, the separation of Victoria and Queensland, and the changes in the boundaries of certain of the colonies has appeared in previous issues of this book: See Year Book No. 4 (pp. 16 to 23). The main facts in this connection may be traced by reference to the maps on pages 17 and 18.

2. **No further Creation of Colonies after 1859.**—Since the separation of Queensland in 1859 no other creation of colonies has taken place in Australia, though the boundaries of New South Wales, Queensland, and South Australia were altered later, and the control of the Northern Territory was transferred from South Australia to the Commonwealth in 1911. The dates of foundation of the Australasian colonies, and their areas at the close of 1859, were as shewn in the following table:—

DATES OF FOUNDATION OF AUSTRALIAN COLONIES AND AREAS AS AT END OF 1859.

Colony.	Date of Annexion.	Date of Creation.	Date of First Permanent Settlement.	Area. Square Miles.
New South Wales	1770	1786	1788	1,020,412
Tasmania	1788	1825	1803	26,215
South Australia	1788	1834	1836	309,850
Victoria	1770	1851	1834	87,884
Queensland	1770	1859	1824	554,300
Western Australia	1829	1829	1829	975,920
New Zealand	1840	1841	1814	104,471 ¹

1. By proclamation dated 10th June, 1901, the area of the Dominion was increased by 280 square miles, making it now 104,751 square miles, by the inclusion of the Cook Group and other islands.

3. **Australasia, 1863 to 1900.**—The immense area generally known as Australasia had, by 1863, been divided into seven distinct colonies, the areas of which are shewn below. The areas of the Northern Territory and the Federal Capital Territory, which are now under the exclusive jurisdiction of the Commonwealth, are given separately.

On the 1st January, 1901, the colonies mentioned above, with the exception of New Zealand, were federated under the name of the "Commonwealth of Australia," the designation of "Colonies" being at the same time changed into that of "States." The total area of the Commonwealth is, therefore, 2,974,581 square miles; the dates of creation and the areas of the separate colonies and territories, as determined on the final adjustment of their boundaries, are shewn in the following table:—

DATES OF CREATION AND AREAS OF THE SEVERAL COLONIES AND TERRITORIES.

Colony.	Year of For- mation into Separate Colony.	Present Area in Square Miles.	Colony.	Year of For- mation into Separate Colony.	Present Area in Square Miles.
New South Wales ...	1786	309,460 ¹	New Zealand ...	1841	104,751
Tasmania	1825	26,215	Victoria	1851	87,884
Western Australia ...	1829	975,920	Queensland	1859	670,500
South Australia ...	1834	380,070	Northern Territory	1863	523,620
(proper)			Fed. Capital Ter't'y	1911	912 ²
Commonwealth ... ..	...	...	2,974,581 square miles.		
Australasia ... ..	...	...	3,079,332 square miles.		

1. Exclusive of Federal Capital Territory.

2. Prior to 1911 included with New South Wales.

4. **British New Guinea or Papua.**—Under the administration of the Commonwealth, but not included in it, is British New Guinea or *Papua*, finally annexed by the British Government in 1884. This territory was for a number of years administered by the Queensland Government, but was transferred to the Commonwealth by proclamation on the 1st September, 1906, under the authority of the Papua Act (Commonwealth) of 16th November, 1905. The area of Papua is about 90,540 square miles. More extended reference to this dependency of the Commonwealth will be found in Section xxix.

5. **Transfer of the Northern Territory to the Commonwealth.**—On the 7th December, 1907, the Commonwealth and the State of South Australia entered into an agreement for the surrender to and acceptance by the Commonwealth of the Northern Territory, subject to approval by the Parliaments of the Commonwealth and the State. This approval was given by the South Australian Parliament under the Northern Territory

Surrender Act 1907 (assented to on the 14th May, 1908), and by the Commonwealth Parliament under the Northern Territory Acceptance Act 1910 (assented to on the 16th November, 1910). The Territory accordingly was transferred by Proclamation to the Commonwealth on the 1st January, 1911. Further information may be found in the section of this book on "*The Northern Territory*."

§ 4. Transfer of the Federal Capital Territory to the Commonwealth.

On the 18th October, 1909, the Commonwealth and the State of New South Wales entered into an agreement for the surrender to and acceptance by the Commonwealth of an area of 912 square miles as the seat of Government of the Commonwealth. In December, 1909, Acts were passed by the Commonwealth and New South Wales Parliaments, approving the agreement, and on the 5th December, 1910, a proclamation was issued vesting the Territory in the Commonwealth on and from the 1st January, 1911.

§ 5. The Exploration of Australia.

A fairly complete, though brief, account of the Exploration of Australia was given in Year Book No. 2 (pp. 20 to 39). A brief summary of the more important facts relating to the subject was given in Year Books Nos. 3 and 4. Maps shewing the progress of Australian exploration may be found on page 35 hereof.

§ 6. The Constitutions of the States.

A brief and condensed statement of the constitutional history of the several States, shewing how their present Constitutions have been built up, may be found in Section II. of the second, third, and fourth issues of the Year Book. See No. 4, pp. 27-32.

§ 7. The Federal Movement in Australia.

A summary was given in Year Book No. 1 (pp. 17 to 21) of the "Federal Movement in Australia" from its inception to its consummation; a synopsis thereof was given in Year Books Nos. 2, 3, and 4. See No. 4, pp. 32 to 37.

§ 8. Creation of the Commonwealth.

1. **The Act.**—The Commonwealth of Australia Constitution Act, 63 and 64 Vic., Chapter 12, namely, an Act to constitute the Commonwealth of Australia, was shewn *in extenso* in Year Book No. 1. In the Year Books Nos. 2, 3 and 4, a summary of the Act was given. As two amending Acts, namely, the Constitution Alteration (Senate Elections) Act 1906, and the Constitution Alteration (State Debts) Act 1909, have been passed, it was thought desirable to insert the Act, as amended, in full in Year Book No. 5 and again in the present issue.

THE COMMONWEALTH OF AUSTRALIA CONSTITUTION ACT. 63 & 64 VICT., CHAPTER 12.

An Act to constitute the Commonwealth of Australia. [9th July, 1900.]

WHEREAS the people of New South Wales, Victoria, South Australia, Queensland, and Tasmania, humbly relying on the blessing of Almighty God, have agreed to unite in one indissoluble Federal Commonwealth under the Crown of the United Kingdom of Great Britain and Ireland, and under the Constitution hereby established :

And whereas it is expedient to provide for the admission into the Commonwealth of other Australasian Colonies and possessions of the Queen :

Be it therefore enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1. This Act may be cited as the Commonwealth of Australia Constitution Act.

2. The provisions of this Act referring to the Queen shall extend to Her Majesty's heirs and successors in the sovereignty of the United Kingdom.

3. It shall be lawful for the Queen, with the advice of the Privy Council, to declare by proclamation that, on and after a day therein appointed, not being later than one year after the passing of this Act, the people of New South Wales, Victoria, South Australia, Queensland, and Tasmania, and also, if Her Majesty is satisfied that the people of Western Australia have agreed thereto, of Western Australia, shall be united in a Federal Commonwealth under the name of the Commonwealth of Australia. But the Queen may, at any time after the proclamation, appoint a Governor-General for the Commonwealth.

4. The Commonwealth shall be established, and the Constitution of the Commonwealth shall take effect, on and after the day so appointed. But the Parliaments of the several colonies may at any time after the passing of this Act make any such laws, to come into operation on the day so appointed, as they might have made if the Constitution had taken effect at the passing of this Act.

5. This Act, and all laws made by the Parliament of the Commonwealth under the Constitution, shall be binding on the courts, judges, and people of every State and of every part of the Commonwealth, notwithstanding anything in the laws of any State; and the laws of the Commonwealth shall be in force on all British ships, the Queen's ships of war excepted, whose first port of clearance and whose port of destination are in the Commonwealth.

6. "The Commonwealth" shall mean the Commonwealth of Australia as established under this Act.

"The States" shall mean such of the colonies of New South Wales, New Zealand, Queensland, Tasmania, Victoria, Western Australia, and South Australia, including the northern territory of South Australia, as for the time being are parts of the Commonwealth, and such colonies or territories as may be admitted into or established by the Commonwealth as States: and each of such parts of the Commonwealth shall be called "a State."

"Original States" shall mean such States as are parts of the Commonwealth at its establishment.

7. The Federal Council of Australasia Act 1885 is hereby repealed, but so as not to affect any laws passed by the Federal Council of Australasia and in force at the establishment of the Commonwealth.

Any such law may be repealed as to any State by the Parliament of the Commonwealth, or as to any colony not being a State by the Parliament thereof.

8. After the passing of this Act the Colonial Boundaries Act 1895 shall not apply to any colony which becomes a State of the Commonwealth: but the Commonwealth shall be taken to be a self-governing colony for the purposes of that Act.

9. The Constitution of the Commonwealth shall be as follows:—

THE CONSTITUTION.

This Constitution is divided as follows:—

Chapter I.—The Parliament:—

Part I.—General.

Part II.—The Senate.

Part III.—The House of Representatives.

Part IV.—Both Houses of Parliament.

Part V.—Powers of the Parliament.

Chapter II.—The Executive Government.

Chapter III.—The Judicature.

Chapter IV.—Finance and Trade.

Chapter V.—The States.

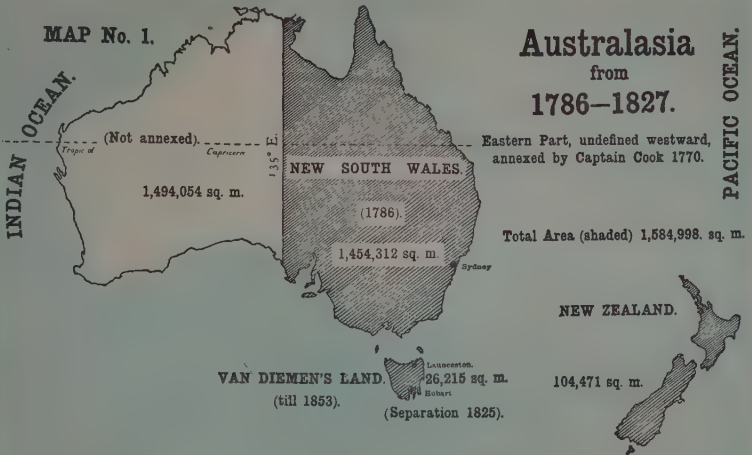
Chapter VI.—New States.

Chapter VII.—Miscellaneous.

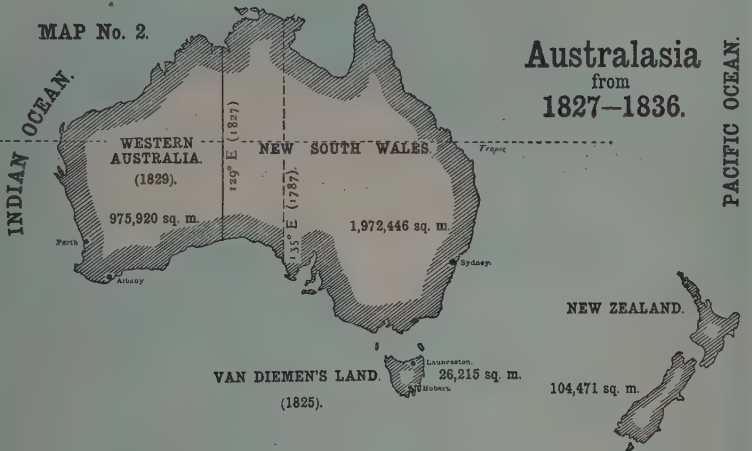
Chapter VIII.—Alteration of the Constitution.

The Schedule.

MAP No. 1.



MAP No. 2.



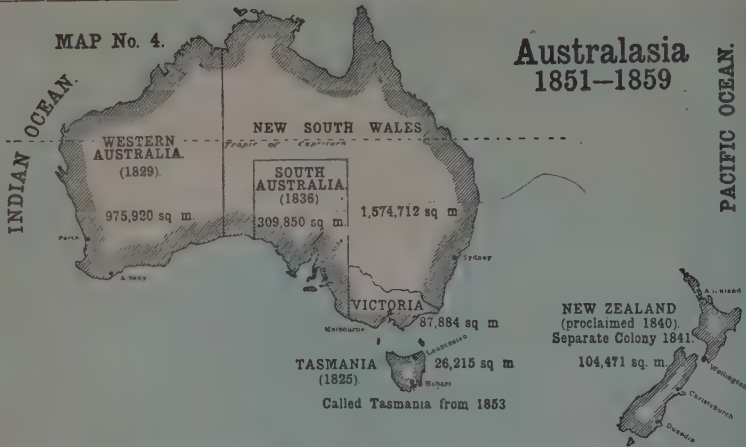
MAP No. 3.



In Map No. 3 "Northern Australia" embraced only the area above the dotted line.

MAP No. 4.

Australasia 1851-1859



MAP No. 5.

Australasia 1859-1861.



MAP No. 6.

Australasia since 1861.



CHAPTER I.—THE PARLIAMENT.

PART I.—GENERAL.

1. The legislative power of the Commonwealth shall be vested in a Federal Parliament, which shall consist of the Queen, a Senate, and a House of Representatives, and which is hereinafter called "The Parliament," or "The Parliament of the Commonwealth."

2. A Governor-General appointed by the Queen shall be Her Majesty's representative in the Commonwealth, and shall have and may exercise in the Commonwealth during the Queen's pleasure, but subject to this Constitution, such powers and functions of the Queen as Her Majesty may be pleased to assign to him.

3. There shall be payable to the Queen out of the Consolidated Revenue fund of the Commonwealth, for the salary of the Governor-General, an annual sum which, until the Parliament otherwise provides, shall be ten thousand pounds.

The salary of a Governor-General shall not be altered during his continuance in office.

4. The provisions of this Constitution relating to the Governor-General extend and apply to the Governor-General for the time being, or such persons as the Queen may appoint to administer the Government of the Commonwealth; but no such person shall be entitled to receive any salary from the Commonwealth in respect of any other office during his administration of the Government of the Commonwealth.

5. The Governor-General may appoint such times for holding the sessions of the Parliament as he thinks fit, and may also from time to time, by Proclamation or otherwise, prorogue the Parliament, and may in like manner dissolve the House of Representatives.

After any general election the Parliament shall be summoned to meet not later than thirty days after the day appointed for the return of the writs.

The Parliament shall be summoned to meet not later than six months after the establishment of the Commonwealth.

6. There shall be a session of the Parliament once at least in every year, so that twelve months shall not intervene between the last sitting of the Parliament in one session and its first sitting in the next session.

PART II.—THE SENATE.

7. The Senate shall be composed of senators for each State, directly chosen by the people of the State, voting, until the Parliament otherwise provides, as one electorate.

But until the Parliament of the Commonwealth otherwise provides, the Parliament of the State of Queensland, if that State be an original State, may make laws dividing the State into divisions and determining the number of senators to be chosen for each division, and in the absence of such provision the State shall be one electorate.

Until the Parliament otherwise provides there shall be six senators for each Original State. The Parliament may make laws increasing or diminishing the number of senators for each State, but so that equal representation of the several Original States shall be maintained and that no Original State shall have less than six senators.

The senators shall be chosen for a term of six years, and the names of the senators chosen for each State shall be certified by the Governor to the Governor-General.

8. The qualification of electors of senators shall be in each State that which is prescribed by the Constitution, or by the Parliament, as the qualification for electors of members of the House of Representatives; but in the choosing of senators each elector shall vote only once.

9. The Parliament of the Commonwealth may make laws prescribing the method of choosing senators, but so that the method shall be uniform for all the States. Subject

to any such law, the Parliament of each State may make laws prescribing the method of choosing the senators for that State.

The Parliament of a State may make laws for determining the times and places of elections of senators for that State.

10. Until the Parliament otherwise provides, but subject to this Constitution, the laws in force in each State, for the time being, relating to elections for the more numerous House of the Parliament of the State shall, as nearly as practicable, apply to elections of senators for the State.

11. The Senate may proceed to the despatch of business, notwithstanding the failure of any State to provide for its representation in the Senate.

12. The Governor of any State may cause writs to be issued for elections of senators for the State. In case of the dissolution of the Senate the writs shall be issued within ten days from the proclamation of such dissolution.

13. As soon as may be after the Senate first meets, and after each first meeting of the Senate following a dissolution thereof, the Senate shall divide the senators chosen for each State into two classes, as nearly equal in number as practicable; and the places of the senators of the first class shall become vacant at the expiration of [*the third year*] *three years*¹, and the places of those of the second class at the expiration of [*the sixth year*] *six years*¹ from the beginning of their term of service; and afterwards the places of senators shall become vacant at the expiration of six years from the beginning of their term of service.

The election to fill vacant places shall be made [in the year at the expiration of which] *within one year before*¹ the places are to become vacant.

For the purpose of this section the term of service of a senator shall be taken to begin on the first day of [January] *July*¹ following the day of his election, except in the cases of the first election and of the election next after any dissolution of the Senate, when it shall be taken to begin on the first day of [January] *July*¹ preceding the day of his election.²

14. Whenever the number of senators for a State is increased or diminished, the Parliament of the Commonwealth may make such provision for the vacating of the places of senators for the State as it deems necessary to maintain regularity in the rotation.

15. If the place of a senator becomes vacant before the expiration of his term of service, the Houses of Parliament of the State for which he was chosen shall, sitting and voting together, choose a person to hold the place until the expiration of the term, or until the election of a successor as hereinafter provided, whichever first happens. But if the Houses of Parliament of the State are not in session at the time when the vacancy is notified, the Governor of the State, with the advice of the Executive Council thereof, may appoint a person to hold the place until the expiration of fourteen days after the beginning of the next session of the Parliament of the State, or until the election of a successor, whichever first happens.

At the next general election of members of the House of Representatives, or at the next election of senators for the State, whichever first happens, a successor shall, if the term has not then expired, be chosen to hold the place from the date of his election until the expiration of the term.

The name of any senator so chosen or appointed shall be certified by the Governor of the State to the Governor-General.

1. As amended by section 2 of the Constitution Alteration (Senate Elections) 1906. The words in square brackets have been repealed; amendments are shewn in italics.

2. Under sections 3 and 4, the Constitution Alteration (Senate Elections) 1906, it was also provided that—

(a) The terms of service of the senators whose places would, but for this Act, become vacant at the expiration of the year One thousand nine hundred and nine are extended until the thirtieth day of June One thousand nine hundred and ten.

(b) The terms of service of the senators whose places would, but for this Act, become vacant at the expiration of the year One thousand nine hundred and twelve are extended until the thirtieth day of June One thousand nine hundred and thirteen.

(c) This Act shall not be taken to alter the time of beginning of the term of service of any senator elected in the year One thousand nine hundred and six.

16. The qualifications of a senator shall be the same as those of a member of the House of Representatives.

17. The Senate shall, before proceeding to the despatch of any other business, choose a senator to be the President of the Senate; and as often as the office of President becomes vacant the Senate shall again choose a senator to be the President.

The President shall cease to hold his office if he ceases to be a senator. He may be removed from office by a vote of the Senate, or he may resign his office or his seat by writing addressed to the Governor-General.

18. Before or during any absence of the President, the Senate may choose a senator to perform his duties in his absence.

19. A senator may, by writing addressed to the President, or to the Governor-General if there is no President or if the President is absent from the Commonwealth, resign his place, which thereupon shall become vacant.

20. The place of a senator shall become vacant if for two consecutive months of any session of the Parliament he, without the permission of the Senate, fails to attend the Senate.

21. Whenever a vacancy happens in the Senate, the President, or if there is no President or if the President is absent from the Commonwealth the Governor-General, shall notify the same to the Governor of the State in the representation of which the vacancy has happened.

22. Until the Parliament otherwise provides, the presence of at least one-third of the whole number of the senators shall be necessary to constitute a meeting of the Senate for the exercise of its powers.

23. Questions arising in the Senate shall be determined by a majority of votes, and each senator shall have one vote. The President shall in all cases be entitled to a vote; and when the votes are equal the question shall pass in the negative.

PART III.—THE HOUSE OF REPRESENTATIVES.

24. The House of Representatives shall be composed of members directly chosen by the people of the Commonwealth, and the number of such members shall be, as nearly as practicable, twice the number of the senators.

The number of members chosen in the several States shall be in proportion to the respective numbers of their people, and shall, until the Parliament otherwise provides, be determined, whenever necessary, in the following manner:—

(i.) A quota shall be ascertained by dividing the number of the people of the Commonwealth, as shewn by the latest statistics of the Commonwealth, by twice the number of the senators:

(ii.) The number of members to be chosen in each State shall be determined by dividing the number of the people of the State, as shewn by the latest statistics of the Commonwealth, by the quota; and if on such division there is a remainder greater than one-half of the quota, one more member shall be chosen in the State.

But notwithstanding anything in this section, five members at least shall be chosen in each Original State.

25. For the purposes of the last section, if by the law of any State all persons of any race are disqualified from voting at elections for the more numerous House of the Parliament of the State, then, in reckoning the number of the people of the State or of the Commonwealth, persons of that race resident in that State shall not be counted.

26. Notwithstanding anything in section twenty-four, the number of members to be chosen in each State at the first election shall be as follows:—

New South Wales	23	South Australia	6
Victoria	20	Tasmania	5
Queensland	8		

Provided that if Western Australia is an Original State, the numbers shall be as follows :—

New South Wales	... 26	South Australia...	... 7
Victoria	... 23	Western Australia	... 5
Queensland	... 9	Tasmania	... 5

27. Subject to this Constitution, the Parliament may make laws for increasing or diminishing the number of the members of the House of Representatives.

28. Every House of Representatives shall continue for three years from the first meeting of the House, and no longer, but may be sooner dissolved by the Governor-General.

29. Until the Parliament of the Commonwealth otherwise provides, the Parliament of any State may make laws for determining the divisions in each State for which members of the House of Representatives may be chosen, and the number of members to be chosen for each division. A division shall not be formed out of parts of different States.

In the absence of other provision, each State shall be one electorate.

30. Until the Parliament otherwise provides, the qualification of electors of members of the House of Representatives shall be in each State that which is prescribed by the law of the State as the qualification of electors of the more numerous House of Parliament of the State; but in the choosing of members each elector shall vote only once.¹

31. Until the Parliament otherwise provides, but subject to this Constitution, the laws in force in each State for the time being relating to elections for the more numerous House of the Parliament of the State shall, as nearly as practicable, apply to elections in the State of members of the House of Representatives.

32. The Governor-General in Council may cause writs to be issued for general elections of members of the House of Representatives.

After the first general election, the writs shall be issued within ten days from the expiry of a House of Representatives or from the proclamation of a dissolution thereof.

33. Whenever a vacancy happens in the House of Representatives, the Speaker shall issue his writ for the election of a new member, or if there is no speaker, or if he is absent from the Commonwealth, the Governor-General in Council may issue the writ.

34. Until the Parliament otherwise provides, the qualifications of a member of the House of Representatives shall be as follows :—

(i.) He must be of the full age of twenty-one years, and must be an elector entitled to vote at the election of members of the House of Representatives, or a person qualified to become such elector, and must have been for three years at the least a resident within the limits of the Commonwealth as existing at the time when he is chosen :

(ii.) He must be a subject of the Queen, either natural-born or for at least five years naturalised under a law of the United Kingdom, or of a colony which has become or becomes a State, or of the Commonwealth, or of a State.

35. The House of Representatives shall, before proceeding to the despatch of any other business, choose a member to be the Speaker of the House, and as often as the office of Speaker becomes vacant the House shall again choose a member to be the Speaker.

The Speaker shall cease to hold his office if he ceases to be a member. He may be removed from office by a vote of the House, or he may resign his office or his seat by writing addressed to the Governor-General.

36. Before or during any absence of the Speaker, the House of Representatives may choose a member to perform his duties in his absence.

37. A member may by writing addressed to the Speaker, or to the Governor-General if there is no Speaker or if the Speaker is absent from the Commonwealth, resign his place, which thereupon shall become vacant.

1. The franchise qualification was determined by the Commonwealth Franchise Act 1902.

38. The place of a member shall become vacant if for two consecutive months of any session of the Parliament he, without the permission of the House, fails to attend the House.

39. Until the Parliament otherwise provides, the presence of at least one-third of the whole number of the members of the House of Representatives shall be necessary to constitute a meeting of the House for the exercise of its powers.

40. Questions arising in the House of Representatives shall be determined by a majority of votes other than that of the Speaker. The Speaker shall not vote unless the numbers are equal, and then he shall have a casting vote.

PART IV.—BOTH HOUSES OF THE PARLIAMENT.

41. No adult person who has or acquires a right to vote at elections for the more numerous House of the Parliament of a State shall, while the right continues, be prevented by any law of the Commonwealth from voting at elections for either House of the Parliament of the Commonwealth.

42. Every senator and every member of the House of Representatives shall before taking his seat make and subscribe before the Governor-General, or some person authorised by him, an oath or affirmation of allegiance in the form set forth in the schedule to this Constitution.

43. A member of either House of the Parliament shall be incapable of being chosen or of sitting as a member of the other House.

44. Any person who—

- (i.) Is under any acknowledgment of allegiance, obedience, or adherence to a foreign power, or is a subject or a citizen or entitled to the rights or privileges of a subject or a citizen of a foreign power : or
- (ii.) Is attainted of treason, or has been convicted and is under sentence, or subject to be sentenced, for any offence punishable under the law of the Commonwealth or of the State by imprisonment for one year or longer : or
- (iii.) Is an undischarged bankrupt or insolvent : or
- (iv.) Holds any office of profit under the Crown, or any pension payable during the pleasure of the Crown out of any of the revenues of the Commonwealth : or
- (v.) Has any direct or indirect pecuniary interest in any agreement with the Public Service of the Commonwealth otherwise than as a member and in common with the other members of an incorporated company consisting of more than twenty-five persons :

shall be incapable of being chosen or of sitting as a senator or a member of the House of Representatives:

But sub-section iv. does not apply to the office of any of the Queen's Ministers of State for the Commonwealth, or of any of the Queen's Ministers for a State, or to the receipt of pay, half-pay, or a pension by any person as an officer or member of the Queen's navy or army, or to the receipt of pay as an officer or member of the naval or military forces of the Commonwealth by any person whose services are not wholly employed by the Commonwealth.

45. If a senator or member of the House of Representatives—

- (i.) Becomes subject to any of the disabilities mentioned in the last preceding section : or
- (ii.) Takes the benefit, whether by assignment, composition, or otherwise, of any law relating to bankrupt or insolvent debtors : or
- (iii.) Directly or indirectly takes or agrees to take any fee or honorarium for services rendered to the Commonwealth, or for services rendered in the Parliament to any person or State :

his place shall thereupon become vacant.

46. Until the Parliament otherwise provides, any person declared by this Constitution to be incapable of sitting as a senator or as a member of the House of Representatives shall, for every day on which he so sits, be liable to pay the sum of one hundred pounds to any person who sues for it in any court of competent jurisdiction.

47. Until the Parliament otherwise provides, any question respecting the qualification of a senator or of a member of the House of Representatives, or respecting a vacancy in either House of the Parliament, and any question of a disputed election to either House, shall be determined by the House in which the question arises.

48. Until the Parliament otherwise provides, each senator and each member of the House of Representatives shall receive an allowance of four hundred pounds a year to be reckoned from the day on which he takes his seat.¹

49. The powers, privileges, and immunities of the Senate and of the House of Representatives, and of the members and the committees of each House, shall be such as are declared by the Parliament, and until declared shall be those of the Commons House of Parliament of the United Kingdom, and of its members and committees, at the establishment of the Commonwealth.

50. Each House of the Parliament may make rules and orders with respect to—

- (i.) The mode in which its powers, privileges, and immunities may be exercised and upheld;
- (ii.) The order and conduct of its business and proceedings either separately or jointly with the other House.

PART V.—POWERS OF THE PARLIAMENT.²

51. The Parliament shall, subject to this Constitution, have power to make laws for the peace, order, and good government of the Commonwealth with respect to—

- (i.) Trade and commerce with other countries, and among the States;¹
- (ii.) Taxation; but so as not to discriminate between States or parts of States;
- (iii.) Bounties on the production or export of goods, but so that such bounties shall be uniform throughout the Commonwealth;

1. By the Parliamentary Allowances Act 1907, assented to on the 28th August, the amount of the allowance was increased to £600 a year.

2. Two proposed laws for the alteration of the Constitution were submitted to the people for acceptance or rejection on the 26th April, 1911. They were (A) The Constitution Alteration (Legislative Powers) 1910, and (B) the Constitution Alteration (Monopolies) 1910.

(A) *Constitution Alteration (Legislative Powers) 1910*. The object of this proposed law was to extend the powers of the Commonwealth Government (under section 51 of the Constitution) in four directions, viz.—(a) Trade and Commerce, (b) Corporations, (c) Industrial matters, and (d) Trusts and monopolies.

(a) *Trade and Commerce*. In Section 51, para. (i.) of the Constitution it was proposed to omit the words "with other countries, and among the States," so as to give the Commonwealth Parliament power to legislate with respect to trade and commerce, without limitation.

(b) *Corporations*. It was proposed to omit the words (para. xx.) "Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth," and to insert in lieu thereof the words—"Corporations including (a) the creation, dissolution, regulation, and control of corporations; (b) corporations formed under the law of a State (except any corporation formed solely for religious, charitable, scientific or artistic purposes, and not for the acquisition of gain by the corporation or its members), including their dissolution, regulation, and control; and (c) foreign corporations, including their regulation and control."

(c) *Industrial Matters*. In para. xxxv. it was proposed to omit the words "Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State," and to insert in lieu thereof the words "Labour and employment, including (a) the wages and conditions of labour and employment in any trade, industry, or calling; and (b) the prevention and settlement of industrial disputes, including disputes in relation to employment on or about railways, the property of any State."

(d) *Trusts and Monopolies*. It was proposed to amend Section 51 of the Constitution by adding at the end thereof the following paragraph:—"(xl.) Combinations and monopolies in relation to the production, manufacture, or supply of goods or services."

(B) *Constitution Alteration (Monopolies) 1910*. The object of this proposed law was to alter the Constitution by inserting, after Section 51 thereof, the following section:—"51A. When each House of Parliament, in the same session, has by resolution declared that the industry or business of producing, manufacturing, or supplying goods, or of supplying any specified services, is the subject of any monopoly, the Parliament shall have power to make laws for carrying on the industry or business by or under the control of the Commonwealth, and acquiring for that purpose on just terms any property used in connection with the industry or business."

Neither of the proposed laws was approved by the people.

It is again proposed to submit to the people the question of altering the Constitution so as to extend the powers of the Commonwealth Government on similar lines. See Appendix.

- (iv.) Borrowing money on the public credit of the Commonwealth :
- (v.) Postal, telegraphic, telephonic, and other like services :
- (vi.) The naval and military defence of the Commonwealth and of the several States, and the control of the forces to execute and maintain the laws of the Commonwealth :
- (vii.) Lighthouses, lightships, beacons and buoys :
- viii.) Astronomical and meteorological observations :
- (ix.) Quarantine :
- (x.) Fisheries in Australian waters beyond territorial limits :
- (xi.) Census and statistics :
- (xii.) Currency, coinage, and legal tender :
- (xiii.) Banking, other than State banking ; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money :
- (xiv.) Insurance, other than State insurance ; also State insurance extending beyond the limits of the State concerned :
- (xv.) Weights and measures :
- (xvi.) Bills of exchange and promissory notes :
- (xvii.) Bankruptcy and insolvency :
- (xviii.) Copyrights, patents of inventions and designs, and trade marks :
- (xix.) Naturalisation and aliens :
- (xx.) Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth :¹
- (xxi.) Marriage :
- (xxii.) Divorce and matrimonial causes ; and in relation thereto, parental rights, and the custody and guardianship of infants :
- (xxiii.) Invalid and old-age pensions :
- (xxiv.) The service and execution throughout the Commonwealth of the civil and criminal process and the judgments of the Courts of the States :
- (xxv.) The recognition throughout the Commonwealth of the laws, the public Acts and records, and the judicial proceedings of the States :
- (xxvi.) The people of any race, other than the aboriginal race in any State, for whom it is deemed necessary to make special laws :
- (xxvii.) Immigration and emigration :
- (xxviii.) The influx of criminals :
- (xxix.) External affairs :
- (xxx.) The relations of the Commonwealth with the islands of the Pacific :
- (xxxi.) The acquisition of property on just terms from any State or person for any purpose in respect of which the Parliament has power to make laws :
- (xxxii.) The control of railways with respect to transport for the naval and military purposes of the Commonwealth :
- (xxxiii.) The acquisition, with the consent of a State, of any railways of the State on terms arranged between the Commonwealth and the State :
- (xxxiv.) Railway construction and extension in any State with the consent of that State :
- (xxxv.) Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State :¹
- (xxxvi.) Matters in respect of which this Constitution makes provision until the Parliament otherwise provides :
- (xxxvii.) Matters referred to the Parliament of the Commonwealth by the Parliament or Parliaments of any State or States, but so that the law shall extend only to States by whose Parliaments the matter is referred, or which afterwards adopt the law :

1. See footnote 2 on previous page.

(xxviii.) The exercise within the Commonwealth, at the request or with the concurrence of the Parliaments of all the States directly concerned, of any power which can at the establishment of this Constitution be exercised only by the Parliament of the United Kingdom or by the Federal Council of Australasia :

(xxxix.) Matters incidental to the execution of any power vested by this Constitution in the Parliament or in either House thereof, or in the Government of the Commonwealth, or in the Federal Judicature, or in any department or officer of the Commonwealth.

52. The Parliament shall, subject to this Constitution, have exclusive power to make laws for the peace, order, and good government of the Commonwealth with respect to—

(i.) The seat of Government of the Commonwealth, and all places acquired by the Commonwealth for public purposes :

(ii.) Matters relating to any department of the public service the control of which is by this Constitution transferred to the Executive Government of the Commonwealth :

(iii.) Other matters declared by this Constitution to be within the exclusive power of the Parliament.

53. Proposed laws appropriating revenue or moneys, or imposing taxation, shall not originate in the Senate. But a proposed law shall not be taken to appropriate revenue or moneys, or to impose taxation, by reason only of its containing provisions for the imposition or appropriation of fines or other pecuniary penalties, or for the demand or payment or appropriation of fees for licences, or fees for services under the proposed law.

The Senate may not amend proposed laws imposing taxation, or proposed laws appropriating revenue or moneys for the ordinary annual services of the Government.

The Senate may not amend any proposed law so as to increase any proposed charge or burden on the people.

The Senate may at any stage return to the House of Representatives any proposed law which the Senate may not amend, requesting, by message, the omission or amendment of any items or provisions therein. And the House of Representatives may, if it thinks fit, make any of such omissions or amendments, with or without modifications.

Except as provided in this section, the Senate shall have equal power with the House of Representatives in respect of all proposed laws.

54. The proposed law which appropriates revenue or moneys for the ordinary annual services of the Government shall deal only with such appropriations.

55. Laws imposing taxation shall deal only with the imposition of taxation, and any provision therein dealing with any other matter shall be of no effect.

Laws imposing taxation, except laws imposing duties of customs or of excise, shall deal with one subject of taxation only ; but laws imposing duties of customs shall deal with duties of customs only, and laws imposing duties of excise shall deal with duties of excise only.

56. A vote, resolution, or proposed law for the appropriation of revenue or moneys shall not be passed unless the purpose of the appropriation has in the same session been recommended by message of the Governor-General to the House in which the proposal originated.

57. If the House of Representatives passes any proposed law, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, and if after an interval of three months the House of Representatives, in the same or the next session, again passes the proposed law with or without any amendments which have been made, suggested, or agreed to by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may dissolve the Senate and the House of Representatives simultaneously. But such dissolution shall not take place within six months before the date of the expiry of the House of Representatives by effluxion of time.

If after such dissolution the House of Representatives again passes the proposed law, with or without any amendments which have been made, suggested, or agreed to

by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may convene a joint sitting of the members of the Senate and of the House of Representatives.

The members present at the joint sitting may deliberate and shall vote together upon the proposed law as last proposed by the House of Representatives, and upon amendments, if any, which have been made therein by one House and not agreed to by the other, and any such amendments which are affirmed by an absolute majority of the total number of the members of the Senate and House of Representatives shall be taken to have been carried, and if the proposed law, with the amendments, if any, so carried is affirmed by an absolute majority of the total number of members of the Senate and House of Representatives, it shall be taken to have been duly passed by both Houses of the Parliament, and shall be presented to the Governor-General for the Queen's assent.

58. When a proposed law passed by both Houses of the Parliament is presented so the Governor-General for the Queen's assent, he shall declare, according to his discretion, but subject to this Constitution, that he assents in the Queen's name, or that he withholds assent, or that he reserves the law for the Queen's pleasure.

The Governor-General may return to the House in which it originated any proposed law so presented to him, and may transmit therewith any amendments which he may recommend, and the Houses may deal with the recommendation.

59. The Queen may disallow any law within one year from the Governor-General's assent, and such disallowance on being made known by the Governor-General by speech or message to each of the Houses of the Parliament, or by Proclamation, shall annul the law from the day when the disallowance is so made known.

60. A proposed law reserved for the Queen's pleasure shall not have any force unless and until within two years from the day on which it was presented to the Governor-General for the Queen's assent the Governor-General makes known, by speech or message to each of the Houses of Parliament, or by Proclamation, that it has received the Queen's assent.

CHAPTER II.—THE EXECUTIVE GOVERNMENT.

61. The executive power of the Commonwealth is vested in the Queen and is exercisable by the Governor-General as the Queen's representative, and extends to the execution and maintenance of this Constitution, and of the laws of the Commonwealth.

62. There shall be a Federal Executive Council to advise the Governor-General in the government of the Commonwealth, and the members of the Council shall be chosen and summoned by the Governor-General and sworn as Executive Councillors, and shall hold office during his pleasure.

63. The provisions of this Constitution referring to the Governor-General in Council shall be construed as referring to the Governor-General acting with the advice of the Federal Executive Council.

64. The Governor-General may appoint officers to administer such departments of State of the Commonwealth as the Governor-General in Council may establish.

Such officers shall hold office during the pleasure of the Governor-General. They shall be members of the Federal Executive Council, and shall be the Queen's Ministers of State for the Commonwealth.

After the first general election no Minister of State shall hold office for a longer period than three months unless he is or becomes a senator or a member of the House of Representatives.

65. Until the Parliament otherwise provides, the Ministers of State shall not exceed seven in number, and shall hold such offices as the Parliament prescribes, or, in the absence of provision, as the Governor-General directs.

66. There shall be payable to the Queen, out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of the Ministers of State, an annual sum which, until the Parliament otherwise provides, shall not exceed twelve thousand pounds a year.

67. Until the Parliament otherwise provides, the appointment and removal of all other officers of the Executive Government of the Commonwealth shall be vested in the Governor-General in Council, unless the appointment is delegated by the Governor-General in Council or by a law of the Commonwealth to some other authority.

68. The command in chief of the naval and military forces of the Commonwealth is vested in the Governor-General as the Queen's representative.

69. On a date or dates to be proclaimed by the Governor-General after the establishment of the Commonwealth the following departments of the public service in each State shall become transferred to the Commonwealth :—¹

Posts, telegraphs, and telephones :	Lighthouses, lightships, beacons, and buoys :
Naval and Military defence :	Quarantine.

But the departments of Customs and of excise in each State shall become transferred to the Commonwealth on its establishment.

70. In respect of matters which, under this Constitution, pass to the Executive Government of the Commonwealth, all powers and functions which at the establishment of the Commonwealth are vested in the Governor of a Colony, or in the Governor of a Colony with the advice of his Executive Council, or in any authority of a Colony, shall vest in the Governor-General, or in the Governor-General in Council, or in the authority exercising similar powers under the Commonwealth, as the case requires.

CHAPTER III.—THE JUDICATURE.

71. The Judicial power of the Commonwealth shall be vested in a Federal Supreme Court, to be called the High Court of Australia, and in such other federal courts as the Parliament creates, and in such other courts as it invests with federal jurisdiction. The High Court shall consist of a Chief Justice, and so many other Justices, not less than two, as the Parliament prescribes.

72. The Justices of the High Court and of the other courts created by the Parliament—

- (i.) Shall be appointed by the Governor-General in Council :
- (ii.) Shall not be removed except by the Governor-General in Council, on an address from both Houses of the Parliament in the same session, praying for such removal on the ground of proved misbehaviour or incapacity :
- (iii.) Shall receive such remuneration as the Parliament may fix ; but the remuneration shall not be diminished during their continuance in office.

73. The High Court shall have jurisdiction, with such exceptions and subject to such regulations as the Parliament prescribes, to hear and determine appeals from all judgments, decrees, orders, and sentences—

- (i.) Of any justice or justices exercising the original jurisdiction of the High Court ;
 - (ii.) Of any other federal court, or court exercising federal jurisdiction ; or of the Supreme Court of any State, or of any other court of any State from which at the establishment of the Commonwealth an appeal lies to the Queen in Council :
 - (iii.) Of the Inter-State Commission, but as to questions of law only :
- and the judgment of the High Court in all such cases shall be final and conclusive.

But no exception or regulation prescribed by the Parliament shall prevent the High Court from hearing and determining any appeal from the Supreme Court of a State in any matter in which at the establishment of the Commonwealth an appeal lies from such Supreme Court to the Queen in Council.

Until the Parliament otherwise provides, the conditions of and restrictions on appeals to the Queen in Council from the Supreme Courts of the several States are applicable to appeals from them to the High Court.

1. As to departments and dates of transfer see Section XIX.—COMMONWEALTH FINANCE, § 1, hereinafter.

74. No appeal shall be permitted to the Queen in Council from a decision of the High Court upon any question, howsoever arising, as to the limits *inter se* of the Constitutional powers of the Commonwealth and those of any State or States, or as to the limits *inter se* of the Constitutional powers of any two or more States, unless the High Court shall certify that the question is one which ought to be determined by Her Majesty in Council.

The High Court may so certify if satisfied that for any special reason the certificate should be granted, and thereupon an appeal shall lie to Her Majesty in Council on the question without further leave.

Except as provided in this section, this Constitution shall not impair any right which the Queen may be pleased to exercise by virtue of Her Royal prerogative to grant special leave of appeal from the High Court to Her Majesty in Council. The Parliament may make laws limiting the matters in which such leave may be asked, but proposed laws containing any such limitation shall be reserved by the Governor-General for Her Majesty's pleasure.

75. In all matters—

- (i.) Arising under any treaty :
- (ii.) Affecting consuls or other representatives of other countries :
- (iii.) In which the Commonwealth, or a person suing or being sued on behalf of the Commonwealth, is a party.
- (iv.) Between States, or between residents of different States, or between a State and a resident of another State :
- (v.) In which a writ of Mandamus or prohibition or an injunction is sought against an officer of the Commonwealth ;

the High Court shall have original jurisdiction.

76. The Parliament may make laws conferring original jurisdiction on the High Court in any matter—

- i.) Arising under this Constitution, or involving its interpretation ;
- (ii.) Arising under any laws made by the Parliament :
- (iii.) Of Admiralty and maritime jurisdiction ;
- (iv.) Relating to the same subject-matter claimed under the laws of different States.

77. With respect to any of the matters mentioned in the last two sections the Parliament may make laws—

- (i.) Defining the jurisdiction of any federal court other than the High Court :
- (ii.) Defining the extent to which the jurisdiction of any federal court shall be exclusive of that which belongs to or is invested in the courts of the States :
- (iii.) Investing any court of a State with federal jurisdiction.

78. The Parliament may make laws conferring rights to proceed against the Commonwealth or a State in respect of matters within the limits of the judicial power.

79. The federal jurisdiction of any court may be exercised by such number of judges as the Parliament prescribes.

80. The trial on indictment of any offence against any law of the Commonwealth shall be by jury, and every such trial shall be held in the State where the offence was committed, and if the offence was not committed within any State the trial shall be held at such place or places as the Parliament prescribes.

CHAPTER IV.—FINANCE AND TRADE.

81. All revenues or moneys raised or received by the Executive Government of the Commonwealth shall form one Consolidated Revenue Fund, to be appropriated for the purposes of the Commonwealth in the manner and subject to the charges and liabilities imposed by this Constitution.

82. The costs, charges, and expenses incident to the collection, management, and receipt of the Consolidated Revenue Fund shall form the first charge thereon; and the revenue of the Commonwealth shall in the first instance be applied to the payment of the expenditure of the Commonwealth.

83. No money shall be drawn from the Treasury of the Commonwealth except under appropriation made by law.

But until the expiration of one month after the first meeting of the Parliament the Governor-General in Council may draw from the Treasury and expend such moneys as may be necessary for the maintenance of any department transferred to the Commonwealth and for the holding of the first elections for the Parliament.

84. When any department of the public service of a State becomes transferred to the Commonwealth, all officers of the department shall become subject to the control of the Executive Government of the Commonwealth.

Any such officer who is not retained in the service of the Commonwealth shall, unless he is appointed to some other office of equal emolument in the public service of the State, be entitled to receive from the State any pension, gratuity, or other compensation, payable under the law of the State on the abolition of his office.

Any such officer who is retained in the service of the Commonwealth shall preserve all his existing and accruing rights, and shall be entitled to retire from office at the time, and on the pension or retiring allowance, which would be permitted by the law of the State if his service with the Commonwealth were a continuation of his service with the State. Such pension or retiring allowance shall be paid to him by the Commonwealth; but the State shall pay to the Commonwealth a part thereof, to be calculated on the proportion which his term of service with the State bears to his whole term of service, and for the purpose of the calculation his salary shall be taken to be that paid to him by the State at the time of transfer.

Any officer who is, at the establishment of the Commonwealth, in the public service of a State, and who is, by consent of the Governor of the State with the advice of the Executive Council thereof, transferred to the public service of the Commonwealth, shall have the same rights as if he had been an officer of a department transferred to the Commonwealth and were retained in the service of the Commonwealth.

85. When any department of the public service of a State is transferred to the Commonwealth—

- (i.) All property of the State of any kind, used exclusively in connexion with the department, shall become vested in the Commonwealth; but, in the case of the departments controlling customs and excise and bounties, for such time only as the Governor-General in Council may declare to be necessary:
- (ii.) The Commonwealth may acquire any property of the State, of any kind used, but not exclusively used in connexion with the department; the value thereof shall, if no agreement can be made, be ascertained in, as nearly as may be, the manner in which the value of land, or of an interest in land, taken by the State for public purposes is ascertained under the law of the State in force at the establishment of the Commonwealth:
- (iii.) The Commonwealth shall compensate the State for the value of any property passing to the Commonwealth under this section: if no agreement can be made as to the mode of compensation, it shall be determined under laws to be made by the Parliament:
- (iv.) The Commonwealth shall, at the date of the transfer, assume the current obligations of the State in respect of the department transferred.

86. On the establishment of the Commonwealth, the collection and control of duties of customs and of excise, and the control of the payment of bounties, shall pass to the Executive Government of the Commonwealth.

87. During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, of the net revenue of the Commonwealth from duties of customs and of excise not more than one-fourth shall be applied annually by the Commonwealth towards its expenditure.

The balance shall, in accordance with this Constitution, be paid to the several States, or applied to the payment of interest on debts of the several States taken over by the Commonwealth.¹

88. Uniform duties of customs shall be imposed within two years after the establishment of the Commonwealth.²

89. Until the imposition of uniform duties of customs—

- (i.) The Commonwealth shall credit to each State the revenues collected therein by the Commonwealth.
- (ii.) The Commonwealth shall debit to each State—
 - (a) The expenditure therein of the Commonwealth incurred solely for the maintenance or continuance as at the time of transfer, of any department transferred from the State to the Commonwealth ;
 - (b) The proportion of the State, according to the number of its people, in the other expenditure of the Commonwealth.
- (iii) The Commonwealth shall pay to each State month by month the balance (if any) in favour of the State.

90. On the imposition of uniform duties of customs the power of the Parliament to impose duties of customs and of excise, and to grant bounties on the production or export of goods, shall become exclusive.

On the imposition of uniform duties of customs all laws of the several States imposing duties of customs or of excise, or offering bounties on the production or export of goods, shall cease to have effect, but any grant of or agreement for any such bounty lawfully made by or under the authority of the Government of any State shall be taken to be good if made before the thirtieth day of June, one thousand eight hundred and ninety-eight, and not otherwise.

91. Nothing in this Constitution prohibits a State from granting any aid to or bounty on mining for gold, silver, or other metals, nor from granting, with the consent of both Houses of the Parliament of the Commonwealth expressed by resolution, any aid to or bounty on the production or export of goods.

92. On the imposition of uniform duties of customs, trade, commerce, and intercourse among the States, whether by means of internal carriage or ocean navigation, shall be absolutely free.

But notwithstanding anything in this Constitution, goods imported before the imposition of uniform duties of customs into any State, or into any Colony which, whilst the goods remain therein, becomes a State, shall, on thence passing into another State, within two years after the imposition of such duties, be liable to any duty chargeable on the importation of such goods into the Commonwealth, less any duty paid in respect of the goods on their importation.

93. During the first five years after the imposition of uniform duties of customs and thereafter until the Parliament otherwise provides—

- (i.) The duties of customs chargeable on goods imported into a State and afterwards passing into another State for consumption, and the duties of excise paid on goods produced or manufactured in a State and afterwards passing into another State for consumption, shall be taken to have been collected not in the former but in the latter State :

1. This has been known as the Braddon clause. The Surplus Revenue Act 1910 provides for the termination of this clause as from the 31st December, 1910, and for the payment to the States of twenty-five shillings per head of population until the 30th June, 1920, or thereafter, until Parliament otherwise provides, subject to certain adjustments for the year ended 30th June, 1911. For further information see Section XIX. hereinafter.

2. Uniform customs duties were imposed by the Customs Tariff 1902, Section 5 of which, together with the schedule, and the whole of the Customs Tariff 1906 were repealed by the Customs Tariff 1908 (see Section XV., COMMERCE, § 2, hereinafter).

- (ii.) Subject to the last sub-section, the Commonwealth shall credit revenue, debit expenditure, and pay balances to the several States as prescribed for the period preceding the imposition of uniform duties of customs.¹

94. After five years from the imposition of uniform duties of customs, the Parliament may provide, on such basis as it deems fair, for the monthly payment to the several States of all surplus revenue of the Commonwealth.

95. Notwithstanding anything in this Constitution, the Parliament of the State of Western Australia, if that State be an original State, may, during the first five years after the imposition of uniform duties of customs, impose duties of customs on goods passing into that State and not originally imported from beyond the limits of the Commonwealth; and such duties shall be collected by the Commonwealth.

But any duty so imposed on any goods shall not exceed during the first of such years the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and shall not exceed during the second, third, fourth, and fifth of such years respectively, four-fifths, three-fifths, two-fifths, and one-fifth of such latter duty, and all duties imposed under this section shall cease at the expiration of the fifth year after the imposition of uniform duties.

If at any time during the five years the duty on any goods under this section is higher than the duty imposed by the Commonwealth on the importation of the like goods, then such higher duty shall be collected on the goods when imported into Western Australia from beyond the limits of the Commonwealth.

96. During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, the Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit.

97. Until the Parliament otherwise provides, the laws in force in any Colony which has become or becomes a State with respect to the receipt of revenue and the expenditure of money on account of the Government of the Colony, and the review and audit of such receipt and expenditure, shall apply to the receipt of revenue and the expenditure of money on account of the Commonwealth in the State in the same manner as if the Commonwealth, or the Government or an officer of the Commonwealth, were mentioned whenever the Colony, or the Government or an officer of the Colony, is mentioned.

98. The power of the Parliament to make laws with respect to trade and commerce extends to navigation and shipping, and to railways the property of any State.

99. The Commonwealth shall not, by any law or regulation of trade, commerce, or revenue, give preference to one State or any part thereof over another State or any part thereof.

100. The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation.

101. There shall be an Inter-State Commission, with such powers of adjudication and administration as the Parliament deems necessary for the execution and maintenance, within the Commonwealth, of the provisions of this Constitution relating to trade and commerce, and of all laws made thereunder.

102. The Parliament may by any law with respect to trade or commerce forbid, as to railways, any preference or discrimination by any State, or by any authority constituted under a State, if such preference or discrimination is undue and unreasonable, or unjust to any State; due regard being had to the financial responsibilities incurred by any State in connexion with the construction and maintenance of its railways. But no preference or discrimination shall, within the meaning of this section, be taken to be undue and unreasonable, or unjust to any State, unless so adjudged by the Inter-State Commission.

1. The Surplus Revenue Act 1908, which was amended by the Surplus Revenue Act 1910, states that the provisions of Section 93 of the Constitution shall expire on the date of the commencement of the Surplus Revenue Act 1908, that is, on 13th June, 1908, and also makes provisions in lieu of the expired provisions. The Surplus Revenue Act 1910 repeals the greater part of the provisions of the Act of 1908. See footnote to Section 87 of this Act.

103. The members of the Inter-State Commission—

- (i.) Shall be appointed by the Governor-General in Council :
- (ii.) Shall hold office for seven years, but may be removed within that time by the Governor-General in Council, on an address from both Houses of Parliament in the same session praying for such removal on the ground of proved misbehaviour or incapacity :
- (iii.) Shall receive such remuneration as the Parliament may fix ; but such remuneration shall not be diminished during their continuance in office.

104. Nothing in this Constitution shall render unlawful any rate for carriage of goods upon a railway, the property of a State, if the rate is deemed by the Inter-State Commission to be necessary for the development of the territory of the State, and if the rate applies equally to goods within the State and to goods passing into the State from other States.

105. The Parliament may take over from the States their public debts [as existing at the establishment of the Commonwealth],¹ or a proportion thereof according to the respective numbers of their people as shewn by the latest statistics of the Commonwealth, and may convert, renew, or consolidate such debts, or any part thereof ; and the States shall indemnify the Commonwealth in respect of the debts taken over, and thereafter the interest payable in respect of the debts shall be deducted and retained from the portions of the surplus revenue of the Commonwealth payable to the several States, or if such surplus is insufficient, or if there is no surplus, then the deficiency or the whole amount shall be paid by the several States.

CHAPTER V.—THE STATES.

106. The Constitution of each State of the Commonwealth shall, subject to this Constitution, continue as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be, until altered in accordance with the Constitution of the State.

107. Every power of the Parliament of a Colony which has become or becomes a State, shall, unless it is by this Constitution exclusively vested in the Parliament of the Commonwealth or withdrawn from the Parliament of the State, continue as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be.

108. Every law in force in a Colony which has become or becomes a State, and relating to any matter within the powers of the Parliament of the Commonwealth, shall, subject to this Constitution, continue in force in the State ; and, until provision is made in that behalf by the Parliament of the Commonwealth, the Parliament of the State shall have such powers of alteration and of repeal in respect of any such law as the Parliament of the Colony had until the Colony became a State.

109. When a law of a State is inconsistent with a law of the Commonwealth, the latter shall prevail, and the former shall, to the extent of the inconsistency, be invalid.

110. The provisions of this Constitution relating to the Governor of a State extend and apply to the Governor for the time being of the State, or other chief executive officer or administrator of the government of the State.

111. The Parliament of a State may surrender any part of the State to the Commonwealth ; and upon such surrender, and the acceptance thereof by the Commonwealth, such part of the State shall become subject to the exclusive jurisdiction of the Commonwealth.

112. After uniform duties of customs have been imposed, a State may levy on imports or exports, or on goods passing into or out of the State, such charges as may be necessary for executing the inspection laws of the State ; but the net produce of all charges so levied shall be for the use of the Commonwealth ; and any such inspection laws may be annulled by the Parliament of the Commonwealth.

1. Under Section 2 of the Constitution Alteration (State Debts) 1909, the words in square brackets are omitted.

113. All fermented, distilled, or other intoxicating liquids passing into any State or remaining therein for use, consumption, sale, or storage, shall be subject to the laws of the State as if such liquids had been produced in the State.

114. A State shall not, without the consent of the Parliament of the Commonwealth, raise or maintain any naval or military force, or impose any tax on property of any kind belonging to the Commonwealth, nor shall the Commonwealth impose any tax on property of any kind belonging to a State.

115. A State shall not coin money, nor make anything but gold and silver coin a legal tender in payment of debts.

116. The Commonwealth shall not make any law for establishing any religion, or for imposing any religious observance, or for prohibiting the free exercise of any religion, and no religious test shall be required as a qualification for any office or public trust under the Commonwealth.

117. A subject of the Queen, resident in any State, shall not be subject in any other State to any disability or discrimination which would not be equally applicable to him if he were a subject of the Queen resident in such other State.

118. Full faith and credit shall be given, throughout the Commonwealth, to the laws, the public Acts and records, and the judicial proceedings of every State.

119. The Commonwealth shall protect every State against invasion and, on the application of the Executive Government of the State, against domestic violence.

120. Every State shall make provision for the detention in its prisons of persons accused or convicted of offences against the laws of the Commonwealth, and for the punishment of persons convicted of such offences, and the Parliament of the Commonwealth may make laws to give effect to this provision.

CHAPTER VI.—NEW STATES.

121. The Parliament may admit to the Commonwealth or establish new States, and may upon such admission or establishment make or impose such terms and conditions, including the extent of representation in either House of the Parliament, as it thinks fit.

122. The Parliament may make laws for the government of any territory surrendered by any State to and accepted by the Commonwealth, or of any territory placed by the Queen under the authority of and accepted by the Commonwealth, or otherwise acquired by the Commonwealth, and may allow the representation of such territory in either House of the Parliament to the extent and on the terms which it thinks fit.

123. The Parliament of the Commonwealth may, with the consent of the Parliament of a State, and the approval of the majority of the electors of the State voting upon the question, increase, diminish, or otherwise alter the limits of the State, upon such terms and conditions as may be agreed on, and may, with the like consent, make provision respecting the effect and operation of any increase or diminution or alteration of territory in relation to any State affected.

124. A new State may be formed by separation of territory from a State, but only with consent of the Parliament thereof, and a new State may be formed by the union of two or more States or parts of States, but only with the consent of the Parliaments of the States affected.

CHAPTER VII.—MISCELLANEOUS.

125. The seat of Government of the Commonwealth shall be determined by the Parliament, and shall be within territory which shall have been granted to or acquired by the Commonwealth, and shall be vested in and belong to the Commonwealth, and shall be in the State of New South Wales, and be distant not less than one hundred miles from Sydney.

Such territory shall contain an area of not less than one hundred square miles, and such portion thereof as shall consist of Crown lands shall be granted to the Commonwealth without any payment therefor.



PROGRESS OF AUSTRALIAN EXPLORATION.

The above maps compiled by Mr. E. Favenc shew decennially the progress of discovery from 1808 to 1888. The dark shade shews the area of unexplored territory.



The Parliament shall sit at Melbourne until it meet at the seat of Government.

126. The Queen may authorise the Governor-General to appoint any person, or any persons jointly or severally, to be his deputy or deputies within any part of the Commonwealth, and in that capacity to exercise during the pleasure of the Governor-General such powers and functions of the Governor-General as he thinks fit to assign to such deputy or deputies, subject to any limitations expressed or directions given by the Queen; but the appointment of such deputy or deputies shall not affect the exercise by the Governor-General himself of any power or function.

127. In reckoning the numbers of the people of the Commonwealth, or of a State or other part of the Commonwealth, aboriginal natives shall not be counted.

CHAPTER VIII.—ALTERATION OF THE CONSTITUTION.¹

128. This Constitution shall not be altered except in the following manner:—

The proposed law for the alteration thereof must be passed by an absolute majority of each House of the Parliament, and not less than two nor more than six months after its passage through both Houses the proposed law shall be submitted in each State to the electors qualified to vote for the election of members of the House of Representatives.²

But if either House passes any such proposed law by an absolute majority, and the other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, and if after an interval of three months the first-mentioned House in the same or the next session again passes the proposed law by an absolute majority with or without any amendment which has been made or agreed to by the other House, and such other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, the Governor-General may submit the proposed law as last proposed by the first-mentioned House, and either with or without any amendments subsequently agreed to by both Houses, to the electors in each State qualified to vote for the election of the House of Representatives.

When a proposed law is submitted to the electors the vote shall be taken in such manner as the Parliament prescribes. But until the qualification of electors of members of the House of Representatives becomes uniform throughout the Commonwealth, only one-half the electors voting for and against the proposed law shall be counted in any State in which adult suffrage prevails.

And if in a majority of the States a majority of the electors voting approve the proposed law, and if a majority of all the electors voting also approve the proposed law it shall be presented to the Governor-General for the Queen's assent.

No alteration diminishing the proportionate representation of any State in either House of the Parliament, or the minimum number of representatives of a State in the House of Representatives, or increasing, diminishing, or otherwise altering the limits of the State, or in any manner affecting the provisions of the Constitution in relation thereto, shall become law unless the majority of the electors voting in that State approve the proposed law.

SCHEDULE.

OATH.

I, A.B., do swear that I will be faithful and bear true allegiance to Her Majesty Queen Victoria, Her heirs and successors according to law. SO HELP ME GOD!

1. The Constitution has been altered by the following Acts:—The Constitution Alteration (Senate Elections) 1906 (No. 1 of 1907); and the Constitution Alteration (State Debts) 1909 (No. 3 of 1910).

2. The Referendum (Constitution Alteration) Act, 1906-1910, provides the necessary machinery for the submission to the electors of any proposed law for the alteration of the Constitution.

AFFIRMATION.

I, *A.B.*, do solemnly and sincerely affirm and declare that I will be faithful and bear true allegiance to Her Majesty Queen Victoria, Her heirs and successors according to law.

(NOTE.—*The name of the King or Queen of the United Kingdom of Great Britain and Ireland for the time being is to be substituted from time to time.*)

2. **The Royal Proclamation.**—The preceding Act received the Royal assent on the 9th July, 1900. This made it lawful (see Sec. 3) to declare that the people of Australia should be united in a Federal Commonwealth. This proclamation, made on the 17th September, 1900, constituted the Commonwealth as from the 1st January, 1901: it reads as follows:—

BY THE QUEEN.

A PROCLAMATION.

(Signed) VICTORIA R.

WHEREAS by an Act of Parliament passed in the Sixty-third and Sixty-fourth Years of Our Reign, intituled “An Act to constitute the Commonwealth of *Australia*,” it is enacted that it shall be lawful for the Queen, with the advice of the Privy Council, to declare by Proclamation, that, on and after a day therein appointed, not being later than One Year after the passing of this Act, the people of *New South Wales, Victoria, South Australia, Queensland, and Tasmania*, and also, if Her Majesty is satisfied that the people of *Western Australia* have agreed thereto, of *Western Australia*, shall be united in a Federal Commonwealth under the name of the Commonwealth of *Australia*.

And whereas We are satisfied that the people of *Western Australia* have agreed thereto accordingly.

We therefore, by and with the advice of Our Privy Council, have thought fit to issue this Our Royal Proclamation, and We do hereby declare that on and after the First day of *January* One thousand nine hundred and one, the people of *New South Wales, Victoria, South Australia, Queensland, Tasmania, and Western Australia* shall be united in a Federal Commonwealth under the name of the Commonwealth of *Australia*.

Given at Our Court at *Balmoral* this Seventeenth day of *September*, in the Year of Our Lord One thousand nine hundred, and in the Sixty-fourth Year of Our Reign.

GOD SAVE THE QUEEN.

§ 8. Commonwealth Legislation.

1. **The Commonwealth Parliaments.**—The first Parliament of the Commonwealth was convened by proclamation dated 29th April, 1901, by His Excellency the late Marquis of Linlithgow, then Earl of Hopetoun, Governor-General. It was opened on the 9th May by H.R.H. the Duke of Cornwall and York, who had been sent to Australia for that purpose by His Majesty the King; the Rt. Hon. Sir Edmund Barton, P.C., G.C.M.G., K.C., being Prime Minister. It was dissolved on the 23rd November, 1903. The second Parliament was convened on the 2nd March, 1904, by His Excellency the Rt. Hon. Baron Northcote, P.C., G.C.M.G., G.C.I.E., C.B.; the Hon. Alfred Deakin being Prime Minister. The third session closed on the 12th October, 1906, and Parliament

was dissolved on the 8th November, 1906. The first session of the third Parliament commenced on the 20th February, 1907, and the fourth and last session on the 26th May, 1909. This Parliament expired by effluxion of time on the 19th February, 1910. The first session of the fourth Parliament dated from the 1st July, 1910, and was on the 29th November following prorogued until the 7th February, 1911, the prorogation finally extending to the 5th September, when the second session commenced. This session was prorogued on the 21st December, 1911, such prorogation extending to the 19th June, 1912, when the third and final session was entered upon. The Debates of these Parliaments will be found in Volumes I. to LXIX. of the Parliamentary Debates, as follows:—

First Parliament,	1st Session	Vols.	I. to XII.,	pp. 1 to 16,744
" "	2nd "	"	XIII. " XVII.,	" 1 " 6,440
Second Parliament,	1st "	"	XVIII. " XXIV.,	" 1 " 8,618
" "	2nd "	"	XXV. " XXX.,	" 1 " 7,461
" "	3rd "	"	XXXI. " XXXV.,	" 1 " 6,491
Third Parliament,	1st "	"	XXXVI. "	" 1 " 141
" "	2nd "	"	XXXVI. " XLVI.,	" 1 " 12,203
" "	3rd "	"	XLVII. " XLVIII.,	" 1 " 3,180
" "	4th "	"	XLIX. " LIV.,	" 1 " 7,296
Fourth Parliament,	1st "	"	LV. " LIX.,	" 1 " 6,893
" "	2nd "	"	LX. " LXIII.,	" 1 " 4,983
" "	3rd "	"	LXIV. " LXIX.,	" 1 " 7,568

2. **The Several Administrations.**—The following tabular statements shew the names of the several Governors-General, and the constitution of the Ministries which have directed the administration of the affairs of the Commonwealth since its creation:—

(a) GOVERNORS-GENERAL.

- Rt. Hon. EARL OF HOPETOUN (afterwards MARQUIS OF LINLITHGOW), P.C., K.T., G.C.M.G., G.C.V.O. Sworn 1st January, 1901; recalled 9th May, 1902, left Melbourne 2nd July, 1902.
- Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Act. Governor-General). Sworn 17th July, 1902.
- Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Governor-General). Sworn 9th January, 1903; recalled 21st January, 1904.
- Rt. Hon. HENRY STAFFORD BARON NORTHCOTE, P.C., G.C.M.G., G.C.I.E., C.B. Sworn 21st January, 1904; recalled 8th September, 1908.
- Rt. Hon. WILLIAM HUMBLE EARL OF DUDLEY, P.C., G.C.M.G., G.C.V.O., etc. Sworn 9th September, 1908; recalled 31st July, 1911.
- Rt. Hon. THOMAS BARON DENMAN, P.C., G.C.M.G., K.C.V.O. Sworn 31st July, 1911.

(b) BARTON ADMINISTRATION, 1st January, 1901, to 23rd September, 1903.

DEPARTMENTS.	MINISTERS.
External Affairs ...	Rt. Hon. SIR EDMUND BARTON, P.C., G.C.M.G., K.C.
Attorney-General ...	Hon. ALFRED DEAKIN.
Home Affairs ...	Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 7/8/03).
Treasury ...	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (from 7/8/03).
Trade and Customs ...	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
	Rt. Hon. CHARLES CAMERON KINGSTON, P.C., K.C. (resigned 24/7/03)
	Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (from 7/8/03).
Defence ...	The Hon. SIR JAMES ROBERT DICKSON, K.C.M.G. (died 10/1/01).
	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (7/1/01 to 7/8/03).
	Hon. JAMES GEORGE DRAKE (from 7/8/03).
Postmaster-General ...	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 17/1/01).
	Hon. JAMES GEORGE DRAKE (5/2/01 to 7/8/03).
	Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (from 7/8/03).
Vice-President Executive Council	Hon. RICHARD EDWARD O'CONNOR, K.C.
Without Portfolio ...	Hon. N. E. LEWIS (to 23/4/01).
	Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (26/4/01 to 7/8/03).

(c) DEAKIN ADMINISTRATION, 24th September, 1903, to 26th April, 1904.

DEPARTMENTS.	MINISTERS.
External Affairs*	Hon. ALFRED DEAKIN.
Trade and Customs	Hon. SIR WILLIAM JOHN LYNE, K.C.M.G.
Treasury	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Home Affairs	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.
Attorney-General	Hon. JAMES GEORGE DRAKE
Postmaster-General	Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G.
Defence	Hon. AUSTIN CHAPMAN.
Vice-President Executive Council	Hon. THOMAS PLAYFORD

(d) WATSON ADMINISTRATION, 27th April to 17th August, 1904.

DEPARTMENTS.	MINISTERS.
Treasurer	Hon. JOHN CHRISTIAN WATSON
External Affairs	Hon. WILLIAM MORRIS HUGHES
Attorney-General	Hon. HENRY BOURNES HIGGINS, K.C.
Home Affairs	Hon. EGERTON LEE BATCHELOR.
Trade and Customs	Hon. ANDREW FISHER.
Defence	Hon. ANDERSON DAWSON.
Postmaster-General	Hon. HUGH MAHON.
Vice-President Executive Council	Hon. GREGOR MCGREGOR.

(e) REID-MCLEAN ADMINISTRATION, 18th August, 1904, to 4th July, 1905.

DEPARTMENTS.	MINISTERS.
External Affairs	Rt. Hon. GEORGE HOUSTOUN REID, P.C., K.C.
Trade and Customs	Hon. ALLAN MCLEAN.
Attorney-General	Hon. SIR JOSIAH HENRY SYMON, K.C.M.G. K.C.
Treasury	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Home Affairs	Hon. DUGALD THOMSON.
Defence	Hon. JAMES WHITESIDE MCCAY
Postmaster-General	Hon. SYDNEY SMITH
Vice-President Executive Council	Hon. JAMES GEORGE DRAKE.

(f) SECOND DEAKIN ADMINISTRATION, 5th July, 1905, to 12th November, 1908.

DEPARTMENTS.	MINISTERS.
External Affairs	Hon. ALFRED DEAKIN.
Attorney-General	{ Hon. ISAAC ALFRED ISAACS, K.C. (to 11/10/06). Hon. LITTLETON ERNEST GROOM (from 12/10/06).
Trade and Customs	{ Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 29/7/07). Hon. AUSTIN CHAPMAN (from 30/7/07).
Treasurer	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 29/7/07) Hon. SIR WILLIAM JOHN LYNE (from 30/7/07).
Postmaster-General	{ Hon. AUSTIN CHAPMAN (to 29/7/07). Hon. SAMUEL MAUGER (from 30/7/07).
Defence	{ Hon. THOMAS PLAYFORD (to 23/1/07). Hon. THOMAS THOMSON EWING (from 24/1/07).
Home Affairs	{ Hon. LITTLETON ERNEST GROOM (to 11/10/06). Hon. THOMAS THOMSON EWING (from 12/10/06 to 23/1/07). Hon. JOHN HENRY KEATING (from 24/1/07).
Vice-President Executive Council	{ Hon. THOMAS THOMSON EWING (to 11/10/06). Hon. JOHN HENRY KEATING (from 12/10/06 to 19/2/07). Hon. ROBERT WALLACE BEST (from 20/2/07).
Honorary Minister	{ Hon. J. H. KEATING (from 5/7/05 to 11/10/06). Hon. S. MAUGER (from 12/10/06 to 29/7/07). Hon. J. HUME COOK (from 28/1/08).

(g) FISHER ADMINISTRATION, 13th November, 1908, to 2nd June, 1909.

DEPARTMENTS.	MINISTERS.
Treasurer	Hon. ANDREW FISHER.
Attorney-General	Hon. WILLIAM MORRIS HUGHES.
External Affairs	Hon. EGERTON LEE BATCHELOR.
Home Affairs	Hon. HUGH MAHON.
Postmaster-General	Hon. JOSIAH THOMAS.
Defence	Hon. GEORGE FOSTER PEARCE.
Trade and Customs	Hon. FRANK GWYNNE TUDOR.
Vice-President Executive C'ncl	Hon. GREGOR MCGREGOR.
Honorary Minister	Hon. JAMES HUTCHINSON.

(h) THIRD DEAKIN ADMINISTRATION, 2nd June, 1909, to 29th April, 1910.

DEPARTMENTS.	MINISTERS.
Prime Minister (without P'tfolio)	Hon. ALFRED DEAKIN.
Defence... ..	Hon. JOSEPH COOK.
Treasurer	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.
Trade and Customs	Hon. SIR ROBERT WALLACE BEST, K.C.M.G.
External Affairs	Hon. LITTLETON ERNEST GROOM.
Attorney-General	Hon. PATRICK McMAHON GLYNN.
Postmaster-General	Hon. SIR JOHN QUICK.
Home Affairs... ..	Hon. GEORGE WARBURTON FULLER.
Vice-President Executive C'ncl	Hon. EDWARD DAVIS MILLEN.
Honorary Minister	Colonel The Hon. JUSTIN FOX GREENLAW FOXTON, C.M.G.

(i) SECOND FISHER ADMINISTRATION, 29th April, 1910.

DEPARTMENTS.	MINISTERS.
Prime Minister and Treasurer ...	Rt. Hon. ANDREW FISHER, P.C.
Attorney-General	Hon. WILLIAM MORRIS HUGHES.
External Affairs	{ Hon. EGERTON LEE BATCHELOR (died Oct., 1911). Hon. JOSIAH THOMAS (from 14/10/11).
Postmaster-General	{ Hon. JOSIAH THOMAS (to 13/10/11). Hon. CHARLES EDWARD FRAZER (from 14/10/11).
Defence	Hon. GEORGE FOSTER PEARCE.
Trade and Customs	Hon. FRANK GWYNNE TUDOR.
Home Affairs	Hon. KING O'MALLEY.
Vice-President Executive C'ncl	Hon. GREGOR MCGREGOR.
Honorary Ministers	{ Hon. EDWARD FINDLEY. Hon. CHARLES EDWARD FRAZER (to 13/10/11). Hon. ERNEST ALFRED ROBERTS (from 23/10/11).

A further list of the Ministers of State for the Commonwealth, arranged according to the respective offices occupied, is given in the section of this book dealing with the subject of *General Government* (see Section XXV.).

3. The Course of Legislation.—The actual legislation by the Commonwealth Parliament up to the end of the 1911 session is indicated in alphabetical order in "Vol. 10 of the Acts of the Parliament of the Commonwealth of Australia, passed in the session of 1911, with Tables, Appendices and Indexes." A "Chronological Table of Acts passed from 1901 to 1911, shewing how they are affected by subsequent legislation or lapse of time" is also given, and further "A Table of Commonwealth Legislation," for the same period, "in relation to the several provisions of the Constitution," is furnished. Reference may be made to these for complete information. The nature of Commonwealth legislation, up to October, 1912, and its relation to the several provisions of the Constitution, are set forth in the following tabular statement:—

ANALYTIC TABLE OF COMMONWEALTH LEGISLATION.

FROM 1901 TO OCTOBER, 1912, IN RELATION TO THE SEVERAL PROVISIONS OF
THE CONSTITUTION.¹

Section of Constitution.	Short Title of Commonwealth Act.*
	AMENDMENT OF THE CONSTITUTION. Constitution Alteration (Senate Elections) 1906. Constitution Alteration (State Debts) 1909.
	PARLIAMENTARY AND ELECTORAL LAW.
8—30	PARLIAMENTARY FRANCHISE— Commonwealth Franchise Act 1902.
9—34	ELECTIONS— Commonwealth Electoral Act 1902-1911. Senate Elections Act 1903.
24	DETERMINATION OF NUMBER OF MEMBERS OF HOUSE OF REPRESENTATIVES— Representation Act 1905.
47	DISPUTED ELECTIONS AND QUALIFICATIONS— Commonwealth Electoral Act 1902-1911, Part XVI. Disputed Elections and Qualifications Act 1907.
48	ALLOWANCES TO MEMBERS— <i>Parliamentary Allowances Act 1902.*</i> Parliamentary Allowances Act 1907.
49	PRIVILEGES OF PARLIAMENT— Parliamentary Papers Act 1908.
	GENERAL LEGISLATION.
51—(i.)	TRADE AND COMMERCE—EXTERNAL AND INTERSTATE— Sea Carriage of Goods Act 1904 [<i>Bills of Lading</i>]. Secret Commissions Act 1905. Commerce (Trade Descriptions) Act 1905 [<i>Merchandise Marks</i>]. Australian Industries Preservation Act 1906-1910 [<i>Trusts and Dumping</i>]. Spirits Act 1906. <i>Seamen's Compensation Act 1909.</i> Customs (Inter State Accounts) Act 1910. Northern Territory Acceptance Act 1910 (s. 13). Seamen's Compensation Act 1911.
(ii.)	TAXATION— <i>Machinery Acts—</i> Customs Act 1901-1910. Beer Excise Act 1901. Distillation Act 1901. Excise Act 1901. Spirits Act 1906. Excise Procedure Act 1907. Australian Notes Act 1910 (s. 12). Land Tax Assessment Act 1910-1911. <i>Taxing Acts—</i> <i>Customs Tariff 1902.*</i> <i>Customs Tariff 1906 [Agricultural Machinery].*</i> Customs Tariff (South African Preference) 1906; <i>amended by Customs Tariff 1908 (s. 9).</i> <i>Customs Tariff 1908; amended by Customs Tariff Amendment 1908, and Customs Tariff 1910, and Customs Tariff 1911.</i>

1. This Table has been prepared by the Secretary of the Attorney-General's Department Robert Randolph Garran, Esquire, M.A., C.M.G., Barrister-at-Law, etc.

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

Section of Constitution.	Short Title of Commonwealth Act.*
	<p>TAXATION—Continued. Excise Tariff 1902; <i>amended by</i> Sugar Rebate Abolition Act 1903, Excise Tariff 1905, Excise Tariff (Amendment) 1906, Excise Tariff 1908; and Excise (Sugar) Act 1910. Excise Tariff 1906 [<i>Agricultural Machinery</i>]. Excise Tariff 1906 [<i>Spirits</i>]. Excise Tariff 1908; <i>amended by</i> Excise Tariff (Starch) 1908. Bank Notes Tax Act 1910. Land Tax Act 1910.</p>
51—(iii.)	<p>BOUNTIES ON PRODUCTION OR EXPORT— Sugar Bounty Act 1903. Sugar Bounty Act 1905. Sugar Bounty Act 1910. Sugar Bounty Act 1912. Bounties Act 1907. Manufactures Encouragement Act 1908. Shale Oils Bounties Act 1910.</p>
(iv.)	<p>BORROWING MONEY ON THE PUBLIC CREDIT OF THE COMMON- WEALTH— Commonwealth Inscribed Stock Act 1911. Loan Act 1911.</p>
(v.)	<p>POSTAL, TELEGRAPHIC, AND TELEPHONIC SERVICES— Post and Telegraph Act 1901-1910. Post and Telegraph Rates Act 1902-1911. Wireless Telegraphy Act 1905. Tasmanian Cable Rates Act 1906. Telegraph Act 1909. Postal Rates Act 1910. Purchase Telephone Lines Acquisition Act 1911. Pacific Cable Act 1911.</p>
(vi.)	<p>NAVAL AND MILITARY DEFENCE— Naval Agreement Act 1903-1912. Defence Act 1903-1912. Telegraph Act 1909. Naval Defence Act 1910-1911.</p>
(vii.)	<p>LIGHTHOUSES, LIGHTSHIPS, BEACONS AND BUOYS— Lighthouses Act 1911.</p>
(viii.)	<p>ASTRONOMICAL AND METEOROLOGICAL OBSERVATIONS— Meteorology Act 1906.</p>
(ix.)	<p>QUARANTINE— Quarantine Act 1908. Quarantine Act 1912.</p>
(xi.)	<p>CENSUS AND STATISTICS— Census and Statistics Act 1905.</p>
(xii.)	<p>CURRENCY, COINAGE, AND LEGAL TENDER— Coinage Act 1909. Australian Notes Act 1910-1911.</p>
(xiii.)	<p>BANKING, OTHER THAN STATE BANKING, ETC.— Commonwealth Bank Act 1911.</p>
(xiv.)	<p>INSURANCE— Life Assurance Companies Act 1905. Marine Insurance Act 1909.</p>
(xvi.)	<p>BILLS OF EXCHANGE AND PROMISSORY NOTES— Bills of Exchange Act 1909.</p>
(xviii.)	<p>COPYRIGHT, PATENTS, DESIGNS, AND TRADE MARKS— Customs Act 1901-1910 (s. 52 (a), 57). Patents Act 1903-1909. Trade Marks Act 1905. Trade Marks Act 1912. Copyright Act 1905. Designs Act 1906. Designs Act 1912. Patents, Trade Marks and Designs Act 1910.</p>

* Acts whose short titles are printed in italics with a * have been repealed or have expired

Section of Constitution.	Short Title of Commonwealth Act.*
(xix.)	NATURALIZATION AND ALIENS— Naturalization Act 1903.
(xxiii.)	INVALID AND OLD-AGE PENSIONS— Invalid and Old-age Pensions Act 1908-1909.
(xxiv.)	SERVICE AND EXECUTION THROUGHOUT COMMONWEALTH OF PROCESS AND JUDGMENTS OF STATE COURTS— Service and Execution of Process Acts 1901-1905. Service and Execution of Process Act 1912.
(xxv.)	RECOGNITION OF STATE LAWS, RECORDS, ETC.— State Laws and Records Recognition Act 1901.
(xxvi.)	PEOPLE OF ANY RACE, OTHER THAN ABORIGINAL—SPECIAL LAWS— Pacific Island Labourers Act 1901-1906. Commonwealth Franchise Act 1902 (s. 4). Naturalization Act 1903 (s. 5).
(xxvii.)	IMMIGRATION AND EMIGRATION— Immigration Restriction Act 1901-1910. Pacific Island Labourers Act 1901-1906. Contract Immigrants Act 1905. Emigration Act 1910.
(xxix.)	EXTERNAL AFFAIRS— Extradition Act 1903. High Commissioner Act 1909.
51—(xxx.)	RELATIONS WITH PACIFIC ISLANDS— Pacific Island Labourers Act 1901-1906.
(xxxi.)	ACQUISITION OF PROPERTY FOR PUBLIC PURPOSES— <i>Property for Public Purposes Acquisition Act 1901.*</i> <i>Seat of Government Act 1904.*</i> Lands Acquisition Act 1906. Seat of Government Act 1908. Seat of Government Acceptance Act 1909. Seat of Government (Administration) Act 1910 (s. 10). Northern Territory (Administration) Act 1910.
(xxxii.)	CONTROL OF RAILWAYS FOR DEFENCE PURPOSES— Defence Act 1903-1912 (ss. 64-66, 80, 124).
(xxxiv.)	RAILWAY ¹ CONSTRUCTION AND EXTENSION IN ANY STATE WITH THE CONSENT OF THAT STATE— Kalgoorlie to Port Augusta Railway Act 1911-1912.
(xxxv.)	CONCILIATION AND ARBITRATION FOR THE PREVENTION AND SETTLEMENT OF INDUSTRIAL DISPUTES EXTENDING BEYOND THE LIMITS OF ANY ONE STATE— Commonwealth Conciliation and Arbitration Act 1904-1911.
(xxxix.)	MATTERS INCIDENTAL TO THE EXECUTION OF POWERS— Acts Interpretation Act 1901. <i>Punishment of Offences Act 1901.*</i> Acts Interpretation Act 1904. Amendments Incorporation Act 1905. Rules Publication Act 1903. Commonwealth Public Service Act 1902-1911. Jury Exemption Act 1905. Royal Commissions Act 1902-1912. Evidence Act 1905. Commonwealth Salaries Act 1907. Excise Procedure Act 1907. Statutory Declarations Act 1911. Arbitration (Public Service) Act 1911 Commonwealth Inscribed Stock Act 1911. Maternity Allowance Act 1912.

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

Section of Constitution.	Short Title of Commonwealth Act.*
EXECUTIVE GOVERNMENT.	
67	APPOINTMENT AND REMOVAL OF OFFICERS— Commonwealth Public Service Act 1902-1911. Papua Act 1905 (s. 19). Defence Act 1909 (s. 13). High Commissioner Act 1909 (ss. 8, 9). Northern Territory Acceptance Act 1910 (ss. 11, 12).
THE JUDICATURE.	
71—80	CONSTITUTION AND PROCEDURE OF THE HIGH COURT— Judiciary Act 1903-1910. High Court Procedure Act 1903, <i>amended by</i> High Court Procedure Amendment Act 1903.
73	APPELLATE JURISDICTION OF THE HIGH COURT— Judiciary Act 1903-1910. Papua Act 1905 (s. 43).
76	ORIGINAL JURISDICTION OF HIGH COURT—
(i.)	(1) <i>In matters arising under the Constitution or involving its interpretation</i> Judiciary Act 1903-1910 (s. 30).
(ii.)	(2) <i>In matters arising under Laws made by the Parliament—</i> Customs Act 1901-1910 (ss. 221, 227, 245). Excise Act 1901 (ss. 109, 115, 134). Post and Telegraph Act 1901-1910 (ss. 29, 43). <i>Property for Public Purposes Acquisition Act 1901*</i> (ss. 12-17, 25, 52, 55b, 58). Commonwealth Electoral Act 1902-1911 (ss. 193, 206aa). Defence Act 1903-1912 (s. 91). Patents Act 1903-1909 (ss. 47, 58, 67, 75-77, 84-87a, 111). Commonwealth Conciliation and Arbitration Act 1904-1911 (s. 31). Trade Marks Act 1905 (ss. 34, 35, 44, 45, 70-72, 95). Australian Industries Preservation Act 1906-1910 (ss. 10, 11, 13, 21, 22, 26).
	Original Jurisdiction of High Court (continued)—
	Referendum (Constitution Alteration) Act 1906 (ss. 27, 31).
	Lands Acquisition Act 1906 (ss. 10, 11, 24, 36-39, 45, 46, 50, 54, 56, 59).
	Disputed Elections and Qualifications Act 1907 (ss. 2, 6).
77—(ii.)	EXCLUDING JURISDICTION OF STATE COURTS—
	Judiciary Act 1903-1910 (ss. 38, 38A, 39, 57, 59).
(iii.)	INVESTING STATE COURTS WITH FEDERAL JURISDICTION—
	Customs Act 1901-1910 (ss. 221, 227, 245).
	Excise Act 1901 (ss. 109, 115, 134).
	Post and Telegraph Act 1901-1910 (ss. 29, 43).
	<i>Punishment of Offences Act 1901.*</i>
	Commonwealth Electoral Act 1902-1911 (s. 193).
	<i>Claims against the Commonwealth Act 1902.*</i>
	Defence Act 1903-1912 (s. 91).
	Judiciary Act 1903-1910 (ss. 17, 39, 68).
	Patents Act 1903-1909 (ss. 30, 47, 58, 67, 75-77, 84-87a, 111).
	Trade Marks Act 1905 (ss. 34, 35, 44, 45).
	Copyright Act 1905 (s. 60, 73).
	Designs Act 1906 (s. 25, 39).
78	RIGHT TO PROCEED AGAINST COMMONWEALTH OR STATE—
	Judiciary Act 1903-1910 (ss. 56-67).
FINANCE.	
81	APPROPRIATION OF MONEYS— Appropriation and Supply Acts 1901-1912. Audit Act 1901-1912 (ss. 36-37, 62a).

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

Section of Constitution.	Short Title of Commonwealth Act.*
83	PAYMENT OF MONEYS— Audit Act 1901-1912 (ss. 31-37, 62a).
93	CREDITING OF REVENUE AND DEBITING OF EXPENDITURE— Surplus Revenue Act 1908. Surplus Revenue Act 1909.
94	DISTRIBUTION OF SURPLUS REVENUE— Surplus Revenue Act 1908. Surplus Revenue Act 1909. Surplus Revenue Act 1910.
96	ASSISTANCE TO STATES— Tasmania Grant Act 1912.
97	AUDIT OF PUBLIC ACCOUNTS— Audit Act 1901-1912.
	THE STATES.
118	RECOGNITION OF STATE LAWS, RECORDS, ETC.— State Laws and Records Recognition Act 1901.
119	PROTECTION OF STATES FROM INVASION AND VIOLENCE— Defence Act 1903-1912 (s. 51).
	TERRITORIES.
122	GOVERNMENT OF TERRITORIES— Papua Act 1905. Wireless Telegraphy Act 1905. Seat of Government Acceptance Act 1909. Patents Act 1903-1909 (s. 4a). Northern Territory Acceptance Act 1910. Seat of Government (Administration) Act 1910. Northern Territory (Administration) Act 1910. Pine Creek to Katherine River Railway Survey Act 191.
	MISCELLANEOUS.
125	SEAT OF GOVERNMENT— <i>Seat of Government Act 1904.*</i> Seat of Government Act 1908. Seat of Government Acceptance Act 1909. Seat of Government (Administration) Act 1910.
128	ALTERATION OF CONSTITUTION— Referendum (Constitution Alteration) Act 1906-1910. Referendum (Constitution Alteration) Act 1912. Constitution Alteration (Senate Elections) Act 1906. Constitution Alteration (State Debts) Act 1909.

Acts whose short titles are printed in italics with a * have been repealed or have expired.

SECTION III.

PHYSIOGRAPHY.

§ 1. General Description of Australia.

1. **Geographical Position.**—The Australian Commonwealth, which includes the island continent of Australia proper and the island of Tasmania, is situated in the Southern Hemisphere, and comprises in all an area of about 2,974,581 square miles, the mainland alone containing about 2,948,366 square miles. Bounded on the west and east by the Indian and Pacific Oceans respectively, it lies between longitudes 113° 9' E. and 153° 39' E., while its northern and southern limits are the parallels of latitude 10° 41' S. and 39° 8' S., or including Tasmania, 43° 39' S. On its north are the Timor and Arafura Seas and Torres Strait, on its south the Southern Ocean and Bass Strait.¹

(i.) *Tropical and Temperate Regions.* Of the total area of Australia the lesser portion lies within the tropics. Assuming, as is usual, that the latitude of the Tropic of Capricorn is 23° 30' S.², the areas within the tropical and temperate zones are approximately as follows:—

**AREAS OF TROPICAL AND TEMPERATE REGIONS
OF STATES WITHIN TROPICS.**

Areas.	Queensland.	Western Australia.	Northern Territory.	Total.
	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.
Within Tropical Zone	359,000	364,000	426,320	1,149,320
Within Temperate Zone	311,500	611,920	97,300	1,020,720
Ratio of Tropical part to whole State	0.535	0.373	0.814	0.530
Ratio of Temperate part to whole State	0.465	0.627	0.186	0.470

Thus the tropical part is roughly about one-half (0.530) of the three territories mentioned above, or about five-thirteenths of the whole Commonwealth (0.386). See hereafter Meteorology 3.

2. **Area of Australia compared with that of other Countries.**—That the area of Australia is greater than that of the United States of America, that it is four-fifths of that of Canada, that it is more than one-fourth of the area of the whole of the British Empire, that it is nearly three-fourths of the whole area of Europe, that it is more than 25 times as large as any one of the following, viz., the United Kingdom, Hungary, Italy, the Transvaal, and Ecuador, are facts which are not always adequately realised. It is this great size, taken together with the fact of the limited population, that gives to the problems of Australian development their unique character, and its clear comprehension is essential in any attempt to understand those problems.

1. The extreme points are "Steep Point" on the west, "Cape Byron" on the east, "Cape York" on the north, "Wilson's Promontory" on the south, or, if Tasmania be included, "South East Cape." The limits, according to the 1903-4 edition of "A Statistical Account of Australia and New Zealand," p. 2, and, according to Volume XXV. of the "Encyclopædia Britannica," tenth edition, p. 787, are respectively 113° 5' E., 153° 16' E., 10° 39' S., and 39° 11½' S., but these figures are obviously defective. A similar inaccuracy appears in the XI. edition of the Encyclopædia.

2. Its correct value for 1912.0 is 23° 27' 2".64, and it decreases about 0".47 per annum.

The relative magnitudes may be appreciated by a reference to the following table, which shews how large Australia is compared with the countries referred to, or *vice versa*. Thus, to take line 1, we see that Europe is about $1\frac{1}{2}$ times (1.29778) as large as Australia, or that Australia is about three-quarters (more accurately 0.77) of the area of Europe.

SIZE OF AUSTRALIA IN COMPARISON WITH THAT OF OTHER COUNTRIES.

Commonwealth of Australia				2,974,581 square miles.		
Country.				Area.	Australian Commonwealth in comparison with—	In comparison with Australian C ^w wealth.
Continents—				Sq. miles.		
Europe	...	...	...	3,860,368	0.77	1.29778
Asia	...	...	...	16,978,885	0.17	5.70799
Africa	...	...	...	11,201,439	0.25	3.76571
North and Central America and West Indies	...	...	...	8,543,253	0.34	2.87208
South America	...	...	...	7,423,882	0.40	2.49577
Australasia and Polynesia	...	...	...	3,462,418	0.85	1.16400
Total, exclusive of Arctic and Antarctic Conts.				51,470,245	0.05	17.30335
Europe—						
Russia (inclusive of Poland, Ciscaucasia & Finland)	...	...	...	2,122,557	1.40	0.71356
Austria-Hungary (incl. of Bosnia & Herzegovina)	...	...	...	261,101	11.39	0.08777
Germany	...	...	...	208,780	14.25	0.07011
France	...	...	...	207,054	14.37	0.06969
Spain	...	...	...	194,788	15.27	0.06548
Sweden	...	...	...	172,876	17.21	0.05812
Norway	...	...	...	124,130	23.96	0.04173
United Kingdom	...	...	...	121,391	24.50	0.04081
Italy	...	...	...	110,659	26.88	0.03720
Turkey (inclusive of Crete)	...	...	...	68,715	43.29	0.02310
Denmark (inclusive of Iceland)	...	...	...	55,338	53.73	0.01861
Rumania	...	...	...	50,720	58.65	0.01705
Bulgaria	...	...	...	38,080	78.11	0.01280
Portugal	...	...	...	35,490	83.82	0.01193
Greece	...	...	...	25,014	118.91	0.00841
Servia	...	...	...	18,650	159.49	0.00627
Switzerland	...	...	...	15,976	186.22	0.00537
Netherlands	...	...	...	12,648	235.29	0.00425
Belgium	...	...	...	11,373	261.78	0.00382
Montenegro	...	...	...	3,630	819.67	0.00122
Luxemburg	...	...	...	998	2941.18	0.00034
Andorra	...	...	...	175	16997.61	0.00006
Malta	...	...	...	117	25423.76	0.00004
Liechtenstein	...	...	...	65	45793.55	0.00002
San Marino	...	...	...	38	78278.45	0.00001
Monaco	...	...	...	8	371822.63	...
Gibraltar	...	...	...	2	1487290.50	...
Total, Europe				3,860,368	0.77	1.29778
Asia—						
Russia (inclus. of Transcaucasia, Siberia, Steppes, Transcaspia, Turkestan and inland waters)	...	...	...	6,525,130	0.45	2.19364
China and Dependencies...	...	...	...	4,277,170	0.70	1.43791
British India...	...	...	...	1,097,901	2.70	0.36912
Independent Arabia	...	...	...	966,700	3.08	0.32499
Turkey (including Samos)	...	...	...	693,790	4.29	0.29324
Feudatory Indian States...	...	...	...	691,253	4.30	0.29238
Persia	...	...	...	628,000	4.74	0.21112

Country.	Area.	Australian Commonwealth in comparison with—	In com- parison with Australian C'wealth.
	Sq. Miles.		
ASIA (continued)—			
Dutch East Indies ...	584,611	5.09	0.19654
Japan (and Dependencies) ...	260,919	11.04	0.08771
Afghanistan ...	250,000	11.90	0.08405
Siam ...	195,000	15.25	0.06555
Philippine Islands (inclusive of Sulu Archipelago) ...	127,853	23.27	0.04298
Laos ...	98,000	30.35	0.03295
Bokhara ...	83,000	35.83	0.02790
Omán ...	82,000	36.27	0.02757
British Borneo and Sarawak ...	73,106	40.68	0.02457
Nepál ...	54,000	55.10	0.01815
Annam ...	52,100	57.08	0.01752
Tonking ...	46,400	64.10	0.01560
Cambodia ...	45,000	66.10	0.01513
Federated Malay States ...	27,700	107.38	0.00931
Ceylon ...	25,332	117.37	0.00852
Khiva ...	24,000	123.94	0.00807
Cochin China... ..	20,000	148.73	0.00672
Bhután ...	20,000	148.73	0.00672
Aden and Dependencies ...	9,005	330.32	0.00303
Timor, etc. (Portuguese Indian Archipelago) ...	7,330	406.50	0.00246
Brunei ...	4,000	743.64	0.00134
Cyprus ...	3,584	833.33	0.00120
Goa, Damao, and Diu ...	1,638	1818.18	0.00055
Straits Settlements ...	1,600	1851.85	0.00054
Sokotra and Kuria Muria Islands ...	1,382	2152.22	0.00046
Hong Kong and Dependencies ...	405	7344.64	0.00013
Wei-hai-wei ...	285	10623.50	0.00009
Bahrein Islands ...	250	11898.32	0.00008
French India (Pondicherry, etc.) ...	196	15176.43	0.00007
Kiauchau ...	193	15412.33	0.00006
Labuan ...	80	99152.70	0.00001
Italian Concession, Tientsin ...	18	165254.50	0.00001
Macao, etc. ...	4	743643.25	...
Total, Asia ...	16,978,885	0.17	5.70799
Africa—			
French Sahara ...	1,544,000	1.93	0.51907
Turkey (inclusive of Egypt and Soudan) ...	1,384,520	2.14	0.46545
Belgian Congo ...	909,654	3.27	0.30582
French Congo ...	669,000	4.46	0.22491
Angola ...	484,800	6.14	0.16298
Union of South Africa ...	473,184	6.28	0.15907
Rhodesia ...	439,575	6.77	0.14778
Abyssinia ...	432,432	6.88	0.14538
Tripoli and Benghezi ...	398,900	7.45	0.13410
German East Africa ...	384,000	7.74	0.12909
Mauretania ...	344,967	8.62	0.11597
Algeria (including Algerian Sahara) ...	343,500	8.66	0.11548
German South-west Africa ...	322,450	9.23	0.10840
Portuguese East Africa ...	293,400	10.14	0.09864
Bechuanaland Protectorate ...	275,000	10.82	0.09245
Northern Nigeria Protectorate ...	256,400	11.60	0.08620
Madagascar ...	228,000	13.05	0.07665
Uganda Protectorate ...	223,500	13.31	0.07514
Morocco ...	219,000	13.58	0.07362
British East Africa Protectorate ...	202,000	14.72	0.06790
Kamerun ...	191,180	15.56	0.06425
Italian Somaliland ...	139,430	21.34	0.04687
Ivory Coast ...	130,000	22.87	0.04370

Country.	Area.	Australian Commonwealth in comparison with—	In com- parison with Australian C'wealth.
AFRICA (continued)—	Sq. miles.		
French Guinea	95,000	31.31	0.03194
Gold Coast Protectorate (with North. Territories)	80,000	37.18	0.02689
Southern Nigeria and Protectorate	79,880	37.23	0.02685
Senegal	74,000	40.20	0.02488
Rio de Oro, etc.	73,000	40.75	0.0245
Senegambia and Niger	72,000	41.31	0.02420
British Somaliland	68,000	43.74	0.02286
Dahomey	65,000	45.77	0.02185
Tunis	50,000	59.49	0.01681
Eritrea	45,800	64.95	0.01540
Nyasaland Protectorate	43,608	68.21	0.01466
Liberia	40,000	74.36	0.01345
Togoland	38,700	88.26	0.01193
Sierra Leone and Protectorate	31,624	94.06	0.01063
Portuguese Guinea	13,940	213.22	0.00469
Spanish Guinea (Rio Muni, etc.)	12,000	247.88	0.00403
Basutoland	11,716	253.89	0.00393
Swaziland	6,536	455.10	0.00219
French Somali Coast	5,790	513.74	0.00194
Gambia and Protectorate	4,500	661.02	0.00151
Cape Verde Islands	1,480	2000.00	0.00050
Zanzibar	1,020	2941.18	0.00034
Réunion	965	3082.46	0.00032
Mauritius and Dependencies	850	3499.50	0.00028
Fernando Po, etc.	814	3654.28	0.00027
Comoro Islands	620	4761.91	0.00021
St. Thomas and Prince Islands	360	8262.73	0.00012
Seychelles	160	19830.54	0.00005
Mayotte, etc.	140	21247.01	0.00005
St. Helena	47	63288.95	0.00002
Ascension	34	87487.65	0.00001
Spanish North and West Africa	13	228813.92	...
Total, Africa " ..	11,201,439	0.25	3.76571
North and Central America and West Indies—			
Canada	3,729,665	0.80	1.25385
United States (exclusive of Alaska, &c.)	2,973,890	1.00	0.99976
Mexico	767,005	3.88	0.25785
Alaska	590,884	5.03	0.19864
Newfoundland and Labrador	162,734	18.28	0.05471
Nicaragua	49,200	60.46	0.01654
Guatemala	43,290	61.61	0.01623
Greenland	46,740	63.65	0.01571
Honduras	46,250	64.31	0.01555
Cuba	44,164	67.35	0.01484
Costa Rica	23,000	129.32	0.00773
San Domingo	18,045	164.74	0.00607
Haiti	10,204	291.55	0.00343
British Honduras	8,598	345.96	0.00289
Salvador	7,225	411.52	0.00243
Bahamas	4,403	675.58	0.00148
Jamaica	4,200	708.23	0.00141
Porto Rico	3,606	824.90	0.00121
Trinidad and Tobago	1,868	1592.39	0.00063
Leeward Islands	701	4243.33	0.00024
Guadeloupe and Dependencies	688	4323.52	0.00023
Windward Islands	527	5644.36	0.00017

Country.	Area.	Australian Commonwealth in comparison with—	In com- parison Australian C'wealth.
N. & C. AMERICA & W. INDIES (continued)—			
	Sq. miles.		
Curaçao and Dependencies ...	403	7381.09	0.00014
Martinique ...	381	7807.30	0.00013
Turks and Caicos Islands ...	166	17925.18	0.00005
Barbados ...	166	17925.18	0.00005
Danish West Indies ...	138	21554.94	0.00005
St. Pierre and Miquelon ...	93	31984.74	0.00003
Bermudas ...	19	156556.89	...
Total, N. and C. America and W. Indies ...	8,543,253	0.34	2.87208
South America—			
Brazil (inclusive of Acre)...	3,292,991	0.90	1.10704
Argentine Republic ...	1,135,840	2.62	0.38185
Peru ...	695,733	4.28	0.23389
Bolivia ...	608,195	4.89	0.20446
Colombia ...	438,436	6.78	0.14739
Venezuela ...	393,976	7.55	0.13244
Chile ...	292,580	10.17	0.09836
Paraguay ...	171,204	17.37	0.05755
Ecuador ...	116,000	25.64	0.03900
British Guiana ...	90,277	32.95	0.03035
Uruguay ...	72,210	41.19	0.02428
Dutch Guiana ...	46,060	64.60	0.01548
Panamá ...	32,380	91.86	0.01088
French Guiana ...	30,500	97.56	0.01025
Falkland Islands ...	6,500	456.62	0.00219
South Georgia ...	1,000	2974.58	0.00034
Total, South America ...	7,423,882	0.40	2.49577
Australasia and Polynesia—			
Commonwealth of Australia ...	2,974,581	1.00	1.00000
Dutch New Guinea ...	151,789	19.60	0.05103
New Zealand and Dependencies ...	104,751	28.39	0.03522
Papua ...	90,540	32.85	0.03044
Kaiser Wilhelm Land ...	70,000	42.50	0.02353
Bismarck Archipelago ...	20,000	148.73	0.00672
British Solomon Islands ...	14,800	204.36	0.00497
New Caledonia and Dependencies ...	8,548	347.99	0.00287
Fiji ...	7,435	400.08	0.00250
Hawaii ...	6,449	460.83	0.00217
German Solomon Islands, etc. ...	5,160	576.46	0.00173
New Hebrides ...	5,000	594.92	0.00168
French Establishments in Oceania ...	1,520	1960.78	0.00051
German Samoa ...	1,000	2974.58	0.00034
Tonga ...	390	7627.13	0.00013
Guam ...	200	14872.91	0.00007
Gilbert Islands ...	166	17919.16	0.00006
Samoa (U.S.A. part) ...	79	37652.92	0.00003
Norfolk Island ...	10	297458.10	...
Total, Australasia and Polynesia ...	3,462,418	0.85	1.16400
British Empire...	11,447,954	0.26	3.84859

3. **Relative Size of Political Subdivisions.**—As already stated, Australia consists of six States and the Northern and Federal Capital Territories. The areas of these, in relation to one another and to the total of Australia, are shewn in the following table :—

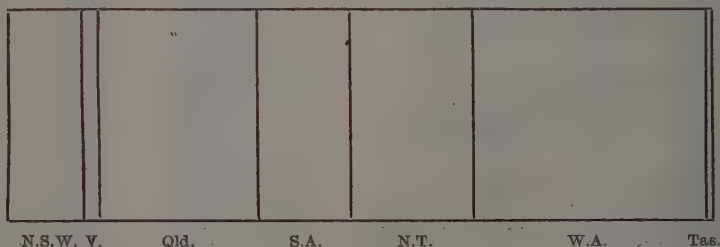
RELATIVE SIZES OF STATES AND COMMONWEALTH.

State.	Area.	Ratio which the Area of each State and Territory bears to that of other States, Territories and Commonwealth.							
		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	N. Ter.	C'with.
	Sq. miles.								
New South Wales	309,460	1.000	3.522	0.462	0.814	0.317	11.806	0.591	0.104
Victoria	87,884	0.284	1.000	0.131	0.231	0.090	3.352	0.168	0.030
Queensland	670,500	2.166	7.629	1.000	1.764	0.687	25.577	1.280	0.225
South Australia	380,070	1.228	4.325	0.567	1.000	0.389	14.498	0.726	0.128
West. Australia	975,920	3.153	11.105	1.455	2.568	1.000	37.228	1.864	0.328
Tasmania	26,215	0.085	0.298	0.039	0.069	0.027	1.000	0.050	0.009
North. Territory	523,620	1.691	5.958	0.781	1.378	0.537	19.974	1.000	0.176
Fed. Capital Ter.	912	0.003	0.010	0.001	0.003	0.001	0.034	0.002	0.000 ¹
Commonwealth	2,974,581	9.610	33.847	4.436	7.827	3.048	113.469	5.681	1.000

1. The correct decimal is 0.0003.

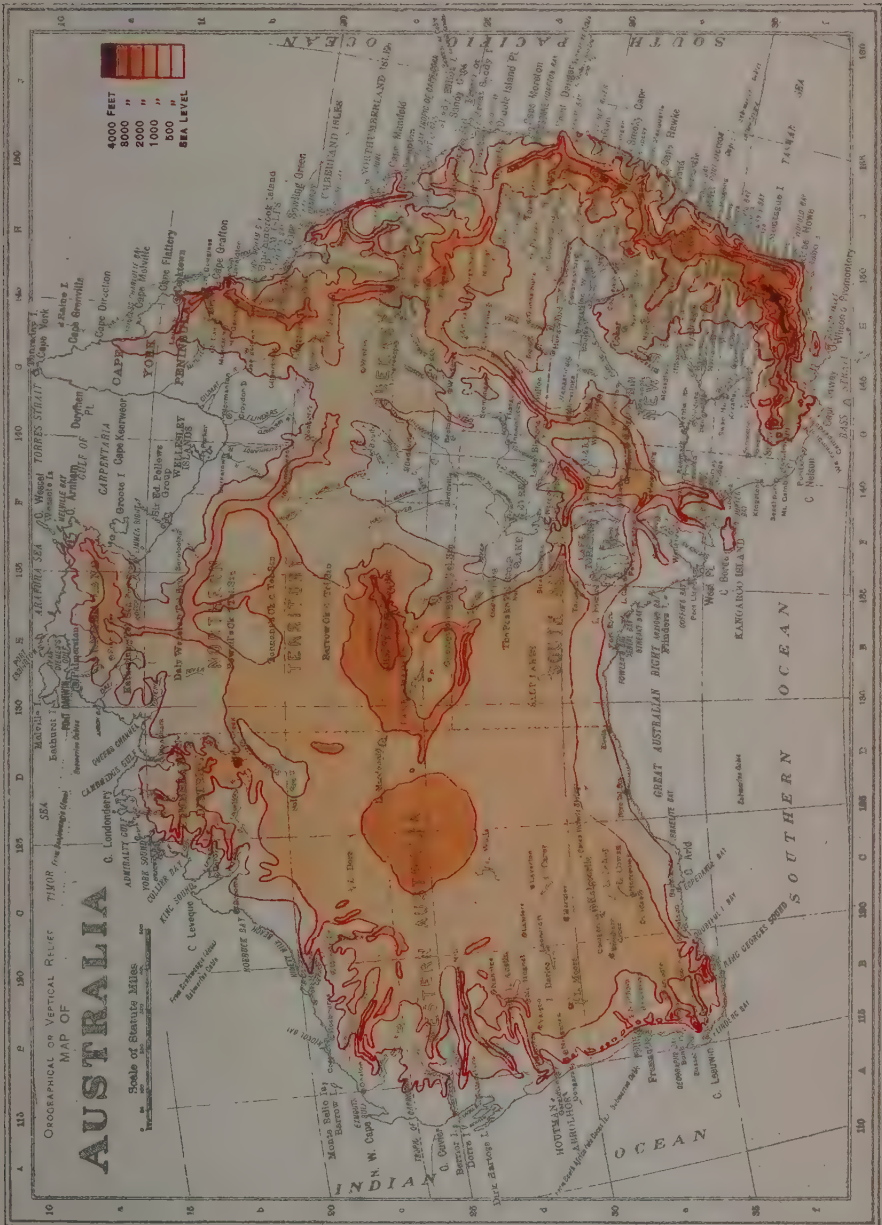
Thus, looking at the top line, New South Wales is seen to be over three-and-a-half times as large as Victoria (3.522) and less than one-half the size of Queensland (0.462); or again, looking at the bottom line, the Commonwealth is shewn to be more than nine-and-a-half times as large as New South Wales (9.610), and nearly thirty-four times as large as Victoria (33.847).

These relative magnitudes are shewn in the small diagram below. It may be added that Papua (or British New Guinea), with its area of 90,540 square miles, is 0.030 of the area of the Commonwealth. The comparatively small size of the Federal Capital Territory prevents its being shewn in this diagram.



4. **Coastal Configuration.**—There are no striking features in the configuration of the coast; the most remarkable indentations are the Gulf of Carpentaria on the north and the Great Australian Bight on the south. The York Peninsula on the extreme north is the only other remarkable feature in the outline. In Year Book No. 1 an enumeration of the features of the coast-line of Australia was given (see pp. 60 to 68).

(i.) *Coast-line.* The lengths of coast-line, exclusive of minor indentations, both of each State and of the whole continent, are shewn in the following table :—





SQUARE MILES OF TERRITORY PER MILE OF COAST LINE.

STATES AND CONTINENT.

State.	Coast-line.	Area ÷ Coast-line.	State.	Coast-line.	Area ÷ Coast-line.
	Miles.	Sq. miles.		Miles.	Sq. miles.
New South Wales ¹	700	443	South Australia ...	1,540	247
Victoria ...	680	129	Western Australia	4,350	224
Queensland ...	3,000	223	Continent ² ...	11,310	261
Northern Territory	1,040	503	Tasmania ...	900	29

1. Including Federal Capital Territory.

2. Area 2,948,366 square miles.

For the entire Commonwealth this gives a coast-line of 12,210 miles, and an average of 244 square miles for one mile of coast line. According to Strelbitski, Europe has only 75 square miles of area to each mile of coast line, and, according to recent figures, England and Wales have only one-third of this, viz., 25 square miles.

(ii.) *Historical Significance of Coastal Names.* It is interesting to trace the voyages of some of the early navigators by the names bestowed by them on various coastal features—thus Dutch names are found on various points of the Western Australian coast, in Nuyt's Archipelago, in the Northern Territory, and in the Gulf of Carpentaria; Captain Cook can be followed along the coasts of New South Wales and Queensland; Flinders' track is easily recognised from Sydney southwards, as far as Cape Catastrophe, by the numerous Lincolnshire names bestowed by him; and the French navigators of the end of the eighteenth and the beginning of the nineteenth century have left their names all along the Western Australian, South Australian, and Tasmanian coasts.

5. **Geographical Features of Australia.**—In each preceding issue of this Year Book, fairly complete information has been given concerning some special geographical element. Thus No. 1 Year Book, pp. 60-68, contains an enumeration of Coastal features, No. 2, pp. 66-77, deals with Hydrology, No. 3, pp. 59-72, with Orography, No. 4, pp. 59-82, with the Lakes of Australia, and No. 5, pp. 51-80, with the Islands of Australia. In the present issue the Mineral Springs of Australia constitute the special feature treated. An orographical or vertical relief map of Australia will be found on p. 53.

§ 2. Mineral Springs in the Commonwealth.

1. **General.**—The following Section contains the latest available information regarding the mineral springs in each State of the Commonwealth. Owing to incomplete examination the details given in some cases are extremely meagre.

2. **New South Wales.**—(i.) The accompanying information regarding the mineral springs of New South Wales has been compiled from particulars furnished by the State Department of Mines. Further information on the subject will be found in "Mineral Resources of New South Wales," by E. F. Pittman (see p. 448 therein), "Iron Ore Deposits of New South Wales," by J. B. Jaquet (see p. 52 therein), and "Geology of the Western Coal Field," by J. E. Carne.

(ii.) (a) *The Mittagong Spring.* The list given below must not be taken as exhaustive, for, as stated by Pittman in his "Mineral Resources," mineral springs are fairly numerous in New South Wales, and their waters vary considerably in composition. Chalybeate springs are common in the Permo-Carboniferous Coal Measures and the overlying Hawkesbury Sandstones, but only the Mittagong Spring—alluded to in the table—has been utilised. Out of a total solids amounting to 15.765 grains per gallon, the Mittagong water contains nearly 6 grains of bicarbonate of iron, over 2 grains each of bicarbonate of magnesium and calcium, over 2 grains each of chloride of sodium and

potassium, and over 1 grain of chloride of magnesium. The water has the usual inky taste, its odour is earthy, and the colour in a two-ft. tube, light brown. This spring is the source of a considerable deposit of brown hematite, and some years ago the Fitzroy Ironworks were opened for the purpose of utilising the ore. Facilities have been provided to enable local residents and visitors to drink the waters.

(b) *The Ballimore Spring.* This spring is situated on the Talbragar River, about 20 miles north-east of Dubbo. It was located by a diamond drill bore put down in 1886 in search of coal. The water, which has a pleasant taste and is highly charged with carbonic acid, rose from a depth of over 540 feet, and the pressure was found sufficient to cause it to flow through perpendicular piping 30 feet above the surface. Out of a total fixed matter amounting to 225 grains per gallon, bicarbonate of soda accounts for 183 grains, of potassium nearly 13 grains, of calcium over 11 grains, of magnesium over 9 grains, while chloride of sodium yields nearly 7 grains. Bicarbonates of lithium, strontium, and iron are present together with traces of silica and alumina.

(c) *The Rock Flat Spring.* This is a natural spring which comes to the surface on the bank of Rock Flat Creek, about 10 miles south-east of Cooma. The water, which is strongly charged with carbonic acid gas, is pleasant to the taste, and discharges at the rate of about 54 gallons per hour. Out of 143 grains of fixed matter per gallon, bicarbonates of calcium and sodium are responsible for 52 grains and 45 grains respectively, while bicarbonate of magnesium yields over 22 grains. Bicarbonates of potassium and strontium are also present, together with 5 grains of chloride of sodium, and traces of silica, alumina, and nitrate of soda.

(d) *The Bungonia Spring.* The mineral water from this spring, which is heavily charged with carbonic acid gas, possesses a very agreeable flavour. The spring is situated in Bungonia Creek, about a mile and a-half to the west of the town of Bungonia. Fixed matter per gallon amounted to nearly 207 grains, of which nearly 143 grains were bicarbonate of calcium. Bicarbonate of magnesium was present to the amount of 32 grains. The other principal constituents afforded by analysis were chloride of sodium and bicarbonate of sodium, which gave nearly 13 grains each.

(e) *The Jarvisville Mineral Spring.* This natural spring issues from the face of a cliff of Hawkesbury Sandstone on the Jarvisville estate, about a mile from Pieton Railway Station. Out of 212 grains of fixed matter per gallon, chloride of sodium accounts for nearly 101 grains, hence the strong saline taste. Amongst the other principal constituents the most noteworthy are bicarbonate of magnesium 50 grains, bicarbonate of calcium 19 grains, chloride of magnesium 26 grains, and sulphate of potash 12 grains.

MINERAL SPRINGS IN NEW SOUTH WALES.

Name of Spring.	Geographical Position.	Geological Characteristics of surrounding Country.	Type of Spring.	Chemical Constituents of water (see also par. ii. above).	Facilities for public use and Medicinal or Remedial Properties.
Mittagong	Mittagong ...	Hawkesbury Sandstone	Chalybeate	For complete analysis see Pittman, Mineral Resources, N.S.W., p. 448, and J. B. Jaquet, Iron Ore Deposits, N.S.W., p. 52	—
Ballimore	Ballimore, Talbragar R.	Mesozoic Sandstones overlying Permian Carboniferous Marine beds	Soda "Zetz Spa"	See Pittman <i>supra</i> ; also Carne, Geol. Western Coal Field	Bore and piping. Table water.
Rock Flat	Cooma ...	Silurian Slates and Limestone	Soda "Koomah Spa"	See Pittman <i>supra</i>	Table water.
Bungonia	Bungonia ...	Devonian Limestone	Soda		
Jarvisville	Pieton ...	Hawkesbury Stone			

3. **Victoria.**—The tabular statement below which gives particulars of the chief mineral springs in Victoria, has been compiled from particulars furnished by the State Mines Department. At the time of compilation of this section it was understood that the Victorian Mines Department intended to publish a complete list of the springs, accompanied by plans.

MINERAL SPRINGS IN VICTORIA.

No. and Name of Spring.*	Geographical Position.	Geological Characteristics of Surrounding Country.	Type of Spring, Rate of Outflow, Temperature of Outflow.	Chemical Composition.	Character of Water and Facilities for Public Use.
	2 miles N.W. of Newstead on the north bank of the Loddon River and south of Allot. 19, Section VI., Parish of Tarrengower	Alluvial flat, no Ordovician bed-rock showing			Crown Lands Shaft and pump over spring
	Near Turpin's Falls on the Campaspe River west of the western boundary of Allot. 6, Sec. 1, Parish of Ember-ton	Issuing from basalt	20 gals. per hour 64° F.	Grains per Gal. Na_2CO_3 ... 34.7 CaCO_3 ... 15.8 MgCO_3 ... 25.0 NaCl ... 9.0 KCl ... 2.6 Na_2SO_4 ... trace Na_2HPO_4 ... — Li_2CO_3 ... trace SiO_2 ... 5.3 Al_2O_3 ... 0.9 Fe_2O_3 } 93.3 CO_2 81.8 ccs of gas per 100 ccs of water.	Crown Lands
	Near Glenluce, on the western side of the Loddon River and west of the western boundary of Allot. 9, Sec. x.A, Parish of Fryers.	In river bed. Ordovician bedrock	16½ gals. per hour 60° F.	Grains per Gal. Na_2CO_3 ... 17.4 MgCO_3 ... 19.9 CaCO_3 ... 19.6 NaCl ... 8.9 KCl ... 1.0 Na_2SO_4 ... 3.9 Li_2CO_3 ... trace SiO_2 ... 3.5 Fe_2O_3 } Al_2O_3 } 0.7 74.9 CO_2 69.9 ccs of gas per 100 ccs of water.	Crown land, Flow small & water difficult to get at, being 3 in. above summer level of river
7B	On Loddon River, about 7 chains up stream from Spring No. 7	On Loddon River In Ordovician bed-rock	16½ gals. per hour 59° F.	Grains per Gal. Na_2CO_3 ... 26.4 CaCO_3 ... 30.8 MgCO_3 ... 29.5 NaCl ... 42.5 KCl ... 1.0 Na_2SO_4 ... 20.6 Li_2CO_3 ... trace SiO_2 ... 2.6 Al_2O_3 } Fe_2O_3 } 0.9 154.3 CO_2 83.7 ccs of gas per 100 ccs of water.	Crown land
	On Limestone Creek in Allot. 3, Sec. 6, Parish of Yandoit	On alluvial flat Ordovician bedrock	Soda spring Large flow		Outlets: (1) Under water in dam about 1 chain wide. On private land (2) A few feet south of the dam a free outlet

* The number given to each spring corresponds with the number on the list as furnished by the State Mines Department.

MINERAL SPRINGS IN VICTORIA—Continued.

No. and Name of Spring.*	Geographical Position.	Geological Characteristics of Surrounding Country.	Type of Spring. Rate of Outflow. Temperature of Outflow.	Chemical Composition.	Character of Water and Facilities for Public use.
10	Near Kyneton on the Campaspe River and south of Allot. 1, Sec. XLVIII, Parish of Lauriston	Ordovician bedrock	654 gals. per hour 61° F.	<p>Grains per Gal.</p> <p>Na₂ CO₃ ... 28.8 Ca CO₃ ... 20.3 Mg CO₃ ... 30.7 Na Cl ... 7.2 K Cl ... 2.8 Na₂ SO₄ ... trace Na₂ HPO₄ ... 1.9 Li₂ CO₃ ... 0.3 Si O₂ ... 6.8 Al₂ O₃ ... 0.9 Fe₂ O₃ ...</p> <p>99.7</p> <p>CO₂ 91.5 ccs of gas per 100 ccs of water.</p>	Clear sparkling water Crown land Pump attached, but natural flow is sufficient.
21	On Kangaroo Creek, and about three chains south of the Glenlyon-Franklinford rd. Section VIII, Parish of Glenlyon	Issuing in small vents from Ordovician bedrock	Large flow		Private land
25	In Boot's Gully, about 14 chains slightly N.W. of Allot. 16, Section XXX, Parish of Wombat	Issuing from Ordovician bedrock	Small flow		Permanent reserve in State forest
27	On Spring Creek, about seven chains east of Sec. IV, Township of Hepburn, Section XXIV, Parish of Wombat	Ordovician bedrock	Soda-Magnesia Not flowing	<p>Grains per gal.</p> <p>No. 1 No. 2 Tap. Tap.</p> <p>Na HCO₃ ... 67.16 73.00 Ca (HCO₃)₂ ... 46.43 45.70 Mg (HCO₃)₂ ... 25.67 25.70 Fe (HCO₃)₂ ... .63 3.05 Mg SO₄ ... 11.06 2.76 K₂ SO₄ ... 1.37 1.46 Ca SO₄ ... trace Silica ... 1.73 2.65 Organic Matter } trace 3.52 Na Cl ... 3.13 trace</p> <p>157.18 157.84</p> <p>Much gas from both taps</p>	Crown lands Fitted with pavilion for public use
31	In Argyle Gully, about 21 chains west from western boundary of Allot. 3, Sec. VIII, Parish of Wombat	Issuing from Ordovician bedrock	Small flow		Crown land Fitted for public use
36	On Sailor's Creek, about 5½ chains west of the western boundary of the Township of Daylesford, Sec. XXVI, Parish of Wombat	On alluvial flat Ordovician bedrock	Good flow		Permanent reserve in State forest Fitted for public use
37	On Deep Creek, about 2½ chains west of N. W. corner of Egan's Corinella Pre-emptive Right, Section B, Parish of Bullarook	On small alluvial flat Ordovician bedrock	Good flow		Crown lands. One of the best springs in the district.

* The number given to each spring corresponds with the number on the list as furnished by the State Mines Department.

MINERAL SPRINGS IN VICTORIA—Continued.

No. and Name of Spring.*	Geographical Position.	Geological Characteristics of Surrounding Country.	Type of Spring, Rate of Outflow, Temperature of Outflow.	Chemical Composition.	Character of Water and Facilities for Public Use.
38 Crystal Spring	On Deep Creek, and on Egan's Corinella Pre-emptive Right, about 38 chains N.W. from the S.E. corner of the Bullarook Public Gardens, Parish of Wombat	Issuing from Ordovician bedrock	Soda-Magnesia Spring Good flow	Grains per gal. Ca CO ₃ ... 25.73 Mg CO ₃ ... 35.72 Na ₂ CO ₃ ... 18.00 Fe ₂ CO ₃ ... 1.70 Ca SO ₄ ... 0.47 Na Cl ... 3.69 Li Cl ... 1.50 Si O ₂ ... 8.40 90.21	Private land Fitted for public use Water bottled by the Company
39	About four chains west of the southern corner of Section XXVII., Township of Daylesford, Parish of Wombat.	On alluvial flat Ordovician bedrock	Medium flow	—	Crown land Shelter shed fitted for public use
41 Sutton's Spring	About 23 chains west of Leggett's Block, Section XXXVII., Township of Daylesford, Parish of Wombat.	On alluvial flat Ordovician bedrock	Medium flow	—	Crown lands, and fitted up for public use
42 Hard Hill Spring	About 11½ chains west from the western boundary of Block west of Leggett St., Sec. XXXVIII., Township of Daylesford, Parish of Wombat.	On alluvial flat Ordovician bedrock	Medium flow	—	Crown land Fitted for public use
48	On Sailor's Creek, 11 chains west from the western boundary of Allot. 10, Sec. A, Parish of Wombat.	Issuing from Ordovician bedrock	Small flow	—	Permanent reserve in State forest
49 Leitch's Creek Spring	On Leitch's Creek about 2½ chains S. of the S.W. angle of Allot. 27, Sec. VI, Parish of Glenlyon	On alluvial flat Ordovician bedrock	Large flow	—	Crown land Fitted for public use Water bottl'd by company
51 Jubilee Lake Spring	On Wombat Creek about ½ chain E. of Allot. 4, Sec. 14A. Par. of Wombat	On alluvial flat Ordovician bedrock	Medium flow	—	Crown land Fitted for public use
56 Lyonville No. 2 Mineral	On the Loddon River about 16½ chains W. from the N.W. angle of Allot. 28, Sec. 1, Parish of Bullarto	On alluvial flat Ordovician bedrock	Small flow 57° F.	Grains per Gal. Na ₂ CO ₃ ... 41.9 Ca CO ₃ ... 22.2 Mg CO ₃ ... 16.4 Na Cl ... 0.9 K Cl ... 1.5 Li ₂ CO ₃ ... trace Si O ₂ ... 2.2 Fe ₂ O ₃ } Al ₂ O ₃ } 1.0 86.1 CO ₂ . Little gas	Permanent reserve in State forest

* The number given to each spring corresponds with the number on the list as furnished by the State Mines Department.

MINERAL SPRINGS IN VICTORIA—Continued.

No. and Name of Spring.*	Geographical Position.	Geological Characteristics of Surrounding Country.	Type of Spring, Rate of Outflow, Temperature of Outflow.	Chemical Composition.	Character of Water and Facilities for Public Use.
57 Lyonville No. 1 Spring	On the Loddon River about 20 chains N.W. of the N.W. angle of the boundary of the Township of Lyonville, Sec. 1, Parish of Bullarto	On alluvial flat Ordovician bedrock	5½ gals. per hour 54° F.	Grains per Gal. Na ₂ CO ₃ ... 34.3 Ca CO ₃ ... 32.8 Mg CO ₃ ... 25.6 Na Cl ... nil K Cl ... 1.6 Li ₂ CO ₃ ... trace Si O ₂ ... 2.2 Fe ₂ O ₃ ... 1.0 Al ₂ O ₃ ... 157.5 CO ₂ 50 ccs of gas per 100 ccs of water.	Crown lands Shelter shed erected
59 Bullarto Spring	In the N.W. of Allot. 16, Sec. III, Parish of Bullarto, and N.W. of the Township of North Bullarto	Issuing from Ordovician bedrock	Small spring	—	Permanent reserve in State forest
60 Sailor's Falls Spring	On Sailor's Creek about 6½ chains W. of the western boundary of Allot. 21A Sec. IV, Parish of Wombat	Issuing from Ordovician bedrock	Small flow	—	Crown land
62	About 10 chains W. of the N.E. angle of Allot. 6 Sec. IV, Parish of Wombat	From shaft issuing through basalt	Good flow	—	One of the best springs in the district
64 Blackwood Spring	Township of Blackwood on the north bank of the Lerderberg River at Tipperary Flat	Issuing from Ordovician bedrock	Soda water Good flow	Grains per Gal. Na HCO ₃ ... 76.84 Ca (HCO ₃) ₂ ... 29.49 Mg (HCO ₃) ₂ ... 1.46 Fe (HCO ₃) ₂ ... trace Na Cl ... 9.05 Ca Cl ₂ ... trace Mg Cl ₂ ... 1.08 K ₂ SO ₄ ... trace Na ₂ SO ₄ ... 1.55 Ca SO ₄ ... trace Organic matter } trace 119.47 Large amount of gas.	Crown land Fitted for public use
65	On the Moorabool River about 20½ chains S.E. from the S.E. angle of Allot. 2 Sec. A, Parish of Korweinguboora	From Ordovician bedrock	Small flow	—	Permanent reserve in State forest
70	On the Moorabool River and in the western portion of Allot. 5 Sec. 14 Parish of Moorabool	From Ordovician bedrock	Soda water Good flow	Grains per Gal. Na HCO ₃ ... 99.28 Ca (HCO ₃) ₂ ... 32.25 Mg (HCO ₃) ₂ ... 18.49 Fe (HCO ₃) ₂ ... trace Mg SO ₄ ... 13.82 K ₂ SO ₄ ... 2.74 Ca SO ₄ ... trace Na Cl ... 5.21 Si O ₂ ... 2.56 Organic matter } trace 174.35	Private land Fitted for public use Cordial factory

* The number given to each spring corresponds with the number on the list as furnished by the State Mines Department.

MINERAL SPRINGS IN VICTORIA—Continued.

No. and Name of Spring.*	Geographical Position.	Geological Characteristics of Surrounding Country.	Type of Spring, Rate of Outflow, Temperature of Outflow.	Chemical Composition.	Character of Water and Facilities for Public Use.
73 Donnybrook Spring	On Merri Merri Creek in the N.E. portion of Allot. 23 Parish of Kalkallo and about $\frac{3}{4}$ mile N.E. from Donnybrook Ry. Station	Issuing from basalt	38 gals. per hour 58.5° F.	<p>Grains per Gal.</p> Na_2CO_3 44.3 CaCO_3 30.2 MgCO_3 79.2 Na_2SO_4 5.8 NaCl 58.1 KCl 2.7 Li_2CO_3 nil SiO_2 6.3 Fe_2O_3 } Al_2O_3 } 0.7 <p>227.3</p> <p>CO_2 38 ccs of gas per 100 ccs of water</p>	Private land Fitted with concrete chamber
74 Coimadai Spring	On the western boundary of allot. and on the eastern bank of Coimadai Creek Allot. 17 Sec. XXII. Parish of Merrimu	Issuing from Ordovician bedrock	—	<p>Grains per Gal.</p> NaCl 101.40 CaCl_2 trace MgCl_2 " " $\text{Mg}(\text{HCO}_3)_2$ 66.30 $\text{Ca}(\text{HCO}_3)_2$ 46.05 NaHCO_3 8.76 $\text{Fe}(\text{HCO}_3)_2$ 1.27 MgSO_4 20.78 CaSO_4 trace K_2SO_4 3.65 SiO_2 1.92 Organic matter trace <p>250.13</p> <p>Small amount of gas.</p>	Private land
75 Clarendon Spring	About 3 chains N. of Williamson's Creek in the southern portion of Allot. A 2A Sec. 8, Par. Clarendon	On alluvial flat Ordovician bedrock	Good flow	—	Private land
76 Geelong Springs No. 1 Spring	Geelong. On beach a little N.W. of the N.W. corner of the Botanical Gardens, Parish of Corio	In Tertiary limestone about tide level	Saline 15½ gals. per hour	<p>Grains per Gal.</p> NaCl 375.6 MgCl_2 1.0 MgSO_4 15.2 $\text{Mg}(\text{HCO}_3)_2$ 49.6 $\text{Ca}(\text{HCO}_3)_2$ 81.4 $\text{Fe}(\text{HCO}_3)_2$ 1.4 SiO_2 2.4 <p>526.6</p> <p>Ammonia (free) 2.4 " (albuminoid) 0.11 Nitrogen as nitrates nil Nitrogen as nitrites nil CO_2 in ccs per 100 ccs of water 31.1 Note.—Ammonia and nitrogen figures calculated in parts per million</p>	On Crown lands Fitted for public use
77 Geelong Springs No. 2 Spring	Geelong. On beach about 2 chains S.W. from No. 76 Spring, Parish of Corio	In Tertiary limestone about tide level	Saline 43½ gals. per hour	<p>Grains per Gal.</p> NaCl 377.9 MgCl_2 0.3 MgSO_4 30.4 $\text{Mg}(\text{HCO}_3)_2$ 42.6 $\text{Ca}(\text{HCO}_3)_2$ 64.9 $\text{Fe}(\text{HCO}_3)_2$ 0.3 SiO_2 2.1 <p>519.0</p>	On Crown lands Fitted for public use

* The number given to each spring corresponds with the number on the list as furnished by the State Mines Department.

MINERAL SPRINGS IN VICTORIA—Continued.

No. and Name of Spring.	Geographical Position.	Geological Characteristics of Surrounding Country.	Type of Spring, Rate of Outflow, Temperature of Outflow.	Chemical Composition.	Character of Water and Facilities for Public Use.
77 (contd.)				Ammonia (free) 0.06 „ (albuminoid) trace Nitrogen as nitrates 0.075 „ „ nitrites nil CO ₂ in ccs per 100 ccs of water 13.3 Note.—The nitrogen and ammonia figures calculated in parts permill'n	
78 Geelong Springs No. 3 Spring	Geelong. On beach about 1½ chains S.W. of No. 77 Spring, Parish of Corio	In Tertiary limestone about tide level	Saline 36 gals. per hour	Grains per Gal. Na Cl 341.2 Mg Cl ₂ 0.6 Mg SO ₄ 13.6 Mg (HCO ₃) ₂ 50.4 Ca (HCO ₃) ₂ 59.1 Fe (HCO ₃) ₂ 1.3 Li O ₂ 2.4 468.6 Ammonia (free) 2.4 „ (albuminoid) 0.11 Nitrogen as nitrates trace „ „ nitrites nil CO ₂ in ccs per 100 ccs of water 22.1 Note.—The nitrogen and ammonia figures are calculated in parts per million	
79 Clifton Springs No. 1 Spring	Bellarine. In N.E. corner of Allot. 6 Sec. 11 Parish of Bellarine, near Clifton Springs Hotel. On coast	Issuing from Tertiary beds	Sulphur spring Small flow	Grains per Gal. Na Cl 338.22 Ca Cl ₂ trace Mg Cl ₂ 50.35 Mg (HCO ₃) ₂ 44.77 Ca (HCO ₃) ₂ 41.47 Na (HCO ₃) ₂ 5.07 Fe (HCO ₃) ₂ trace Mg SO ₄ 19.78 Ca SO ₄ trace K ₂ SO ₄ trace Silica 6.40 Organic matter trace 506.06 CO ₂ . Gas present. This analysis is not from No. 1 Spring, but is given as a typical analysis of the Clifton Springs water	Spring protected and fitted with pump On private property Hot mineral water baths provided at Clifton Spgs. Hotel
80 Clifton Springs No. 2 Spring	Bellarine. On coast about 1½ chains S.W. of No. 79 Spring, Allot. 6 Sec. 2, Par. of Bellarine	Issuing from Tertiary beds	Magnesia spring Small flow	See No. 79.	Do.
81 Clifton Springs No. 3 Spring	Bellarine, 1½ chs. S.W. of No. 80 Spring, Allot. 6 Sec. 2 Parish of Bellarine. On coast	Issuing from Tertiary beds	Seltzer spring Small flow	See No. 79.	Do.
82 Clifton Spring No. 4	Bellarine, 6½ chs. S.W. of No. 81 Spring, Allot. 6 Sec. 2 Parish of Bellarine. On coast	Issuing from Tertiary beds	Iron spring Small flow	See No. 79.	Do.

* The number given to each spring corresponds with the number on the list as furnished by the State Mines Department.

MINERAL SPRINGS IN VICTORIA—Continued.

No. and Name of Spring.	Geographical Position.	Geological Characteristics of Surrounding Country.	Type of Spring, Rate of Outflow, Temperature of Outflow.	Chemical Composition.	Character of Water and Facilities for Public Use.
83 Frankston Spring No. 1	Township of Frankston, S. of Public Gardens, Sec. 10, Parish of Frankston	—	Sulphur spring	Parts per 100,000 Fe SO_4 2.2419 Ca SO_4 4.0000 Mg SO_4 1.2247 Na Cl 9.3200 Ca Cl_2 0.4320 Fe CO_3 0.5400 Ca CO_3 1.4200 Phosphates trace Arsenic trace Si O_2 1.2600 Na Br trace $\text{H}_2 \text{S}$ 2.55 grs. Total solids } inorganic } 19.852	
84 Frankston Spring No. 2	Township of Frankston, near No. 83	—	Chalybeate spring	Parts per 100,000 Fe SO_4 6.0151 Mg SO_4 2.1620 Ca SO_4 4.6420 Na Cl 18.3200 Ca Cl_2 1.0200 Fe CO_3 0.6590 Ca CO_3 1.7320 Phosphates trace Arsenic trace Si O_2 0.1988 $\text{H}_2 \text{S}$ 0.1500 Total solids } inorganic } 30.2143	

4. **Queensland.**—Particulars regarding the mineral springs of Queensland will be found in the tabular statement given below, which has been compiled from particulars supplied by the State Mines Department. In addition to those mentioned in the list, there are some springs on the Walsh River to the north of the Chillagoe railway line, but beyond the fact that the water is cold and potable, little is known of these springs, as they are seldom visited.

MINERAL SPRINGS IN QUEENSLAND.

Name of Spring.	Geographical Position.	Geological Characteristics of surrounding Country, and Type of Spring, &c.	Temperature of Outflow.	Chemical Constituents of Water. Grains per gallon.	Facilities for Public use, and Medical or Remedial Properties
Innot Hot Springs.	8 miles E. by N. of Mount Garnet railway station (Chillagoe line), North Queensland.	The outlets of the springs are in the bed of Innots or Nettles Creek about 1900 ft. above sea level. The prevailing rock in the vicinity is granite, with dykes of felsite traversing slates, schists, &c. On the banks of the creek extensive siliceous sinter deposits are to be found.*	158° to 168° Fahr.	Total Solids 41.6 Iron with Alumina .8 Calcium Carbonate 2.6 Sodium Carbonate 8.6 Sodium Sulphate 3.3 Sodium Chloride 19.1 Silica 7.2 Sulphates as SO_4 3.3	Rheumatic complaints. Table use. Bath houses erected, and hotel accommodation.

MINERAL SPRINGS IN QUEENSLAND—Continued.

Name of Spring.	Geographical Position.	Geological Characteristics of surrounding Country, and Type of Spring, &c.	Temperature of Outflow.	Chemical Constituents of Water, Grains per gallon	Facilities for Public use, and Medicinal or Remedial Properties.
Einasleigh Hot Springs.	102 miles (by rail), S.S.W. of Alnaden railway station (Etheridge line), North Queensland.	The springs have formed several sinter-terraced pools. Basalt forms the bed of the Einasleigh R. and surrounding country, and it has been suggested that the volcanic forces which produced the outbursts of basalt still possess sufficient vitality to give rise to thermal springs.*	...	Total Solids 57.60 Carbonate of Cal. and Magnesium 6.25 Carbonates of Sod. and Potassium 15.94 Chlorides of Sod. and Potassium 32.61 Volatile matter 2.80 Sulphuric Acid Trace Sulphur- etted Hydrogen 2.19	Chlorinated sulphur- etted water, possessing certain medicinal properties. Rheumatic complaints.
Petford (Oakvale) Mineral Springs.	2 miles S. of Petford railway station (Chillagoe line), North Queensland.	The prevailing rock in the vicinity is granite, with slates belonging to the Gympie formation. The outlet of the spring is a few inches in diameter with sinter surrounding it.*	Normal	Total Solids 104.80 Silica 6.57 Iron (Fe ₂ O ₃) with Alumina 0.53 Cal. Carb. 25.95 Mag. Carb. 3.97 Sod. Carb. 54.10 Sodium Chloride 11.37 Potassium Sulphate 1.01 Potassium Chloride 1.12 Lithia Trace	Table use.
Maria Creek Bore.	4 miles W. of Tolmies railway station (central line), 133 miles (by rail and road) W. of Rockhampton.	Bore passed through shales and sandstones belonging to the Upper Bowen formation (Permian Carboniferous), to a depth of 1002 ft. Water met with at 400 ft. Artesian.†		Total Solids 864.50 Silica 2.55 Iron (Fe ₂ O ₃) with Alumina 1.45 Cal. Carb. 15.20 Mag. Carb. 45.45 Sod. Carb. 576.00 Sod. Chloride 223.85	Table use
Sandersons (Stanwell) Bore.	Stony Creek, 2 miles S.S.W. of Stanwell railway station (central line), 18 miles (by rail and road) S.W. of Rockhampton.	Bore sunk in Coal Measures (Permian Carboniferous). Flow of 10,000 gallons per diem at 200 ft., increasing to 15,000 gallons on sinking deeper. Artesian.		Total Solids 33.50 Silica 1.00 Cal. Carb. 7.00 Mag. Carb. 8.50 Sod. Chloride 15.00 Sod. Sulphate 2.00 Free Carbonic Acid 4.40	
The Springs, "Helidon Spa" Water.	Near Helidon, 72 miles (by rail) S.W. of Brisbane.	Water is charged with carbonic acid gas, and is obtained from a natural spring in alluvium, which rests on sandstone belonging to the Ipswich Coal Measures (Trias Jura). Basalt occurs about 1 mile to the south. Artesian.		Total Solids 233.01 Silica 0.29 Iron (Fe ₂ O ₃) with Alumina Trace Cal. Carb. 7.35 Mag. Carb. 3.39 Sod. Carb. 2 12.14 Sod. Chloride 2.99 Lithium Carb. 2.68	Table use.
Muckadilla Bore.	334 miles (by rail) W. of Brisbane.	The rocks in the vicinity of the bore belong to the Rolling Downs formation (lower cretaceous). Basalt occurs about 8 miles to the north. Artesian. The flow uncontrolled is 23,000 gallons daily.		Total Solids 32.85 Silica 3.00 Iron (Fe ₂ O ₃) with Alumina 0.50 Cal. Carb. 3.30 Mag. Carb. 1.51 Sod. Carb. 15.99 Sod. Chloride 6.90 Sod. Sulphate 1.55	Rheumatic complaints. Bath houses erected and hotel accommodation.

* Suggested origin, Geyser. † Flow of 10,000 gallons and more at brief intervals produced by pneumo-dynamic or gas pressure. Water saturated with carbonic anhydride, which under ordinary pressure shows the presence of 32.8 grains per gallon.

5. **South Australia.**—According to the Government Geologist of South Australia there is a large number of springs in that State from which issue mineralised waters of such a character that they may be applied to medicinal uses. Although individual cases have been reported of the application of these mineral waters to such ends, no general recourse to the springs by that section of the community likely to derive benefit from them can be stated to exist.

The areas in which these springs are found occur in parts of the State in which the annual rainfall is low and vegetation is correspondingly sparse. The surroundings are not, as a rule, picturesque in the conventional way, but have a certain weird fascination of their own. The summer climate is trying, but during the winter months the general climatic conditions are pleasant and bracing.

The great majority of the springs are distributed along a zone which fringes the Great Australian Artesian Water Basin. The artesian water appears at the natural springs, where the hydraulic pressure existing in this great depression is sufficient to force it to the surface of the ground through any naturally occurring channel, or where the impermeable rock masses of the margin of the basin arrest the subterranean circulation of the water. Many of these mineral springs build up a mound at the surface by the deposition of mineral material brought up in solution and precipitated as evaporation proceeds. They are consequently often referred to as "mound springs."

The composition of the mineral waters varies from point to point, as may be seen from the analyses. The salts most abundantly present in solution are sodium carbonate, calcium carbonate, sodium chloride, and sulphates of magnesium and sodium. The total amount of solids in solution varies between one-quarter and three-quarters of an ounce to the gallon.

The temperature of the issuing water rises in the case of Paralana Springs to 130° F., but is usually much lower.

The railway line between Oodnadatta and Hergott Springs follows the zone of the mound springs and gives ready access to many of them, but others are more difficult to approach. Dalhousie Springs, a large important group, lie 75 miles to the north of Oodnadatta, and other springs are found at similar distance to the east of Hergott Springs.

The water which issues from these springs is also tapped by a large number of artesian bores. Advantage can be therefore taken of any natural facilities within the limits of the area in which flowing bores are situated to arrange for a supply of uncontaminated water and to control its distribution. Should a sufficiently great demand arise for the mineral waters for medicinal purposes, this method of exploitation will probably be followed.

In addition to the mound springs which are connected with the Great Australian Artesian Basin there are others which are less well known and the origin of which is undetermined. Such are the Indulkana and Arcoellinna springs, distant 120 miles from Oodnadatta in a west-north-westerly direction, and enclosed within the limits of primary rocks.

6. **Western Australia.**—So far as is yet known there are no mineral springs in this State.

7. *Tasmania*.—The accompanying information regarding the mineral springs of Tasmania has been compiled from particulars supplied by the State Government Geologist.

MINERAL SPRINGS IN TASMANIA.

Name of Spring.	Geographical Position.	Geological Characteristics of surrounding Country and Type of Spring.	Suggested Origin.	Temperature of Outflow.	Chemical Constituents of Water.	Facilities for Public use.
Kimberley	Warm spring at Kimberley, Northern Tasmania	In Quaternary beds Carbonate	Meteoric water probably issuing from a fissure dividing Permo - Carboniferous beds from Pre-cambrian quartzite	74° F.	Solid matter, chiefly Carbonate of Lime. } 20 grns. per gal. Chlorine } 1.4 grns. per gal.	On private land near railway station.
Southport	Warm spring near Southport, Southern Tasmania	Permo - Carboniferous	...	85° F.	Not known.	...
Duck River	Springs in country on both sides of Deep Creek, near Duck Bay, North West Coast	No outcrops of rock near Chloride	...	Temperature not ascertained.	Chlorine in Chlorides } 10.9 grns. per gal. Total solid matter } 81.0 grns. per gal. The solids consist chiefly of Sodium Chloride with Carbonates of Lime and Magnesia, the latter Carbonate in larger proportion.	Exclusive control could probably be acquired

1. (a) *Kimberley Spring*. This spring is situated at about 200 yards N.W. of the Kimberley Hotel, on the Mersey and Deloraine Tramway Co.'s land, east of the Mersey, and 20 feet above the present banks of that river. It forms a pool about 130 feet long by 60 feet wide. This pond has a basin-shaped outline a few feet above the present rim, suggestive of a shrinkage in supply of water. The depth of water is from 3 to 6 feet. In one corner of the pool gas bubbles are continually rising to the surface, and this is the part in which the spring is situate. The water escapes at the lowest point and forms a permanent creek. The temperature is constant at 74° F. The composition of the water is shown in the preceding table. The ground surrounding the spring is a pebbly drift of Quaternary age, compacted with a ferruginous cement. The bed rock is conjectural, but Pre-Cambrian quartzite borders the flat in which the spring is situate, and probably junctions with concealed Permo-Carboniferous beds.

(b) *Southport*. Near Southport, up the Lune River, a warm spring (85° F.) bubbles up in the bed of a small tributary stream. The country is level and timbered, though open button grass marshes also exist. The ground is strewn in places with boulders of Mesozoic diabase, and the strata in which the springs occurs are supposed to be of Permo-Carboniferous age.

(c) *Duck River*. On the Mowbray swamp, half mile west of Smithton, are springs issuing from small crateriform mounds of peat 10 to 30 feet high, from which decomposition gas bubbles constantly rise. The water is cold and apparently iron, salt, and lime bearing. The age of the strata is Quaternary. It was in this swamp that the skeleton of the giant Marsupial *Nototherium Tasmanicum* was found in 1910.

§ 3. The Fauna of Australia.

An authoritative article describing in some detail the principal features of the Fauna of Australia was given in Year Books No. 1 (see pp. 103 to 109) and No. 2 (see pp. 111 to 117), while a synoptical statement appeared in No. 3 (see pp. 73 to 76). Considerations of space will, however, preclude the inclusion in this issue of more than a passing reference to the subject.

§ 4. The Flora of Australia.

In Year Books No. 1 (see pp. 109 to 114) and No. 2 (see pp. 117 to 122) a fairly complete though brief account was given of the Flora of Australia, and in Year Book No. 3 similar information in a greatly condensed form will be found on pp. 76 to 78. Space in this issue will not permit of more than a mere reference to preceding volumes.

A special article dealing with Australian fodder plants will be found towards the end of this volume. This article has been contributed by J. H. Maiden, Esq., F.L.S., Government Botanist of New South Wales, and Director of the Botanic Gardens, Sydney.

5. Seismology in Australia.

A brief statement regarding the position of seismology and seismological record in Australia appears in Year Book No. 4, pp. 82 and 83.

Barisal Guns. Reference may be made here to an interesting pamphlet published by Dr. J. Burton Cleland, in which the author sums up the available information regarding the peculiar explosive or booming noises heard at times in Australia as well as in other parts of the world. As far as inland Australia, at all events, is concerned, it seems clear that the explosions are of earth origin, and are probably due to the sudden sundering of immense rock masses, either as a result of climatic influences, or through folding movements in the earth's crust.

§ 6. The Geology of Australia.

1. **General.**—Independent and authoritative sketches of the geology of each State were given in Year Books No. 1 (see pp. 73 to 103) and No. 2 (see pp. 78 to 111). Want of space has precluded the insertion of these sketches in the present issue of the Year Book, and it has not been considered possible to give anything like a sufficient account of the geology of Australia by presenting here a mere condensation of these sketches. Reference must, therefore, be made to either Year Book No. 1 or No. 2, *ut supra*.

2. **Geological Map of Australia.**—The map of the Geology of Australia on page 54. shews the geographical distribution of the more important geological systems and formations.

§ 7. Climate and Meteorology of Australia.¹

1. **Introductory.**—In preceding Year Books some account was given of the history of Australian meteorology, including reference to the development of magnetic observations and the equipment for the determination of various climatological records. (See Year Book 3, pp. 79, 80). In Year Book No. 4, pp. 84 and 87, will be found a short sketch of the creation and organisation of the Commonwealth Bureau of Meteorology and a resumé of the subjects dealt with at the Meteorological Conference of 1907. Space will not permit of the inclusion of this matter in the present issue.

1. Prepared from data supplied by the Commonwealth Meteorologist, H. A. Hunt, Esquire, F.R.M.S.

2. Meteorological Publications.—The following publications are issued daily from the Meteorological Bureau, viz.:—(i.) Weather charts. (ii.) Rainfall maps. (iii.) Bulletins, Victorian and Interstate, shewing pressure, temperature, wind, rain, cloud extent, and weather.

The Bulletins of Climatology are as follows:—No. 1.—A general discussion of the climate and meteorology of Australia, illustrated by one map and diagrams. No. 2.—A discussion of the rainfall over Australia during the ten years (1897-1906) compared with the normal, illustrated by one map. No. 3.—Notes and statistics of the remarkable flood rains over south-eastern Australia during the winter of 1909, illustrated by five maps and diagrams. No. 4.—A discussion of the monthly and seasonal rainfall over Australia, illustrated by one map and diagram. No. 5.—An investigation into the possibility of forecasting the approximate winter rainfall for Northern Victoria, illustrated by two diagrams. No. 6.—The physiography of the proposed Federal Territory at Canberra, illustrated by a relief map and 21 plates. No. 7.—On the climate of the Yass-Canberra district, illustrated by one map. No. 8.—Physiography of Eastern Australia, with 28 text illustrations.

Commencing with January 1910, the "Australian Monthly Weather Report," containing statistical records from representative selected stations, with rain maps and diagrams, etc., is being published. Complete rainfall and other climatological data are published in annual volumes of meteorological statistics for each State separately.

3. General Description of Australia.—In the general description of Australia, page 47, it is pointed out that a considerable portion (0.530) of three divisions of the Australian Commonwealth is north of the tropic of Capricorn, that is to say, within the States of Queensland and Western Australia, and the Northern Territory, no less than 1,149,320¹ square miles belong to the tropical zone, and 1,020,720 to the temperate zone. The whole area of the Commonwealth within the temperate zone, however, is 1,825,261² square miles, thus the tropical part is about 0.386, or about five-thirteenths of the whole, or the "temperate" region is half as large again as the "tropical" (more accurately 1.591). By reason of its insular geographical position, and the absence of striking physical features, Australia is, on the whole, less subject to extremes of weather than are regions of similar area in other parts of the globe; and latitude for latitude Australia is, on the whole, more temperate.

The altitudes of the surface of Australia range up to a little over 7300 feet, hence its climate embraces a great many features, from the characteristically tropical to what is essentially alpine, a fact indicated in some measure by the name Australian Alps given to the southern portion of the great Dividing Range.

While on the coast the rainfall is often abundant and the atmosphere moist, in some portions of the interior the rainfall is very limited, and the atmosphere dry. The distribution of forest, as might be expected, and its climatic influence, is consequently very variable. In the interior there are on the one hand fine belts of trees, on the other there are large areas which are treeless, and where the air is hot and parched in summer. Again, on the coast, even as far south as latitude 35°, the vegetation is tropical in its luxuriance, and also somewhat so in character. Climatologically, therefore, Australia may be said to present a great variety of features. The various climatological characteristics will be referred to in detail.

4. Meteorological Divisions.—The Commonwealth Meteorologist has divided Australia, for climatological and meteorological purposes, into five divisions. The boundaries between these may be thus defined:—(a) Between divisions I. and II., the boundary between South and Western Australia, viz., the 129th meridian of east

1. In the article "Australia" in the *Encyclopædia Britannica*, Vol. XXX., p. 796, this area is given as 1,145,000 square miles.

2. Given as 1,801,700 square miles in the work above quoted, where, however, the statistics are said "to refer only to the continental States of the Federation, not to Tasmania."

longitude; (b) between divisions II. and III., starting at the Gulf of Carpentaria, along the Norman River to Normanton, thence a straight line to Wilcannia on the Darling River, New South Wales; (c) between divisions II. and IV., from Wilcannia along the Darling River to its junction with the Murray; (d) between divisions II. and V., from the junction of the Darling and Murray Rivers, along the latter to Encounter Bay; (e) between divisions III. and IV., starting at Wilcannia, along the Darling, Barwon, and Dumaresq Rivers to the Great Dividing Range, and along that range and along the watershed between the Clarence and Richmond Rivers to Evans Head on the east coast of Australia; (f) between divisions IV. and V., from the junction of the Darling and Murray Rivers along the latter to its junction with the Murrumbidgee, along the Murrumbidgee to the Tumut River, and along the Tumut River to Tumut, thence a straight line to Cape Howe; (g) division V. includes Tasmania.

The population included within these boundaries at the Census of the 3rd April, 1911, was approximately as follows:—

Division	I.	II.	III.	IV.	V.
Population	282,000	429,000	607,000	1,540,000	1,597,000

In these divisions the order in which the capitals occur is as follows:—(i.) Perth, (ii.) Adelaide, (iii.) Brisbane, (iv.) Sydney, (v.) Melbourne, (vi.) Hobart, and for that reason the climatological and meteorological statistics will be set forth in the indicated order in this publication.

(i.) *Special Climatological Stations.* The latitudes, longitudes, and altitudes of special stations, the climatological features of which are graphically represented hereinafter, are as follows:—

SPECIAL CLIMATOLOGICAL STATIONS.

Locality.	Height above Sea Level.	Latitude.		Longitude.		Locality.	Height above Sea Level.	Latitude.		Longitude.	
		S.	E.	S.	E.			S.	E.	S.	E.
Perth ...	197	31 57	115 51			Darwin ...	97	12 28	130 51		
Adelaide ...	140	34 56	138 35			Daly Waters ...	700	16 16	133 23		
Brisbane ...	187	27 28	153 2			Alice Springs ...	1926	23 38	133 37		
Sydney ...	146	33 52	151 12			Dubbo ...	870	32 18	148 35		
Melbourne ...	115	37 50	144 59			Laverton ...	1580	28 40	122 23		
Hobart ...	160	42 53	147 20			Coolgardie ...	1402	30 57	121 10		

5. **Temperatures.**—In respect of Australian temperatures generally it may be pointed out that the isotherm for 70° Fahrenheit extends in South America and South Africa as far south as latitude 33°, while in Australia it reaches only as far south as latitude 30°, thus shewing that, on the whole, Australia has a more temperate climate when compared latitude for latitude with places in the Southern Hemisphere.

The comparison is even more favourable when the Northern Hemisphere is included in the comparison, for in the United States the 70° isotherm extends in several of the western States as far north as latitude 41°. In Europe the same isotherm reaches almost to the southern shores of Spain, passing, however, afterwards along the northern shores of Africa till it reaches the Red Sea, when it bends northward along the eastern shore of the Mediterranean till it reaches Syria. In Asia nearly the whole of the land area south of latitude 40° N. has a higher isothermal value than 70°.

The extreme range of shade temperatures in summer and winter in a very large part of Australia amounts to probably only 81°. In Siberia, in Asia, the similar range is no less than 171°, and in North America 153°, or approximately double the Australian range.

Along the northern shores of the Australian continent the temperatures are very equable. At Darwin, for example, the difference in the means for the hottest and

coldest months is only 8.6°, and the extreme readings for the year, that is, the highest maximum in the hottest month and the lowest reading in the coldest month, shew a difference of under 50°.

Coming southward the extreme range of temperature increases gradually on the coast, and in a more pronounced way inland.

The detailed temperature results for the several capitals of the States of Australia are shewn in the Climatological Tables hereinafter. It will suffice here to briefly refer to special features.

(i.) *Perth.* Meteorological observations were taken in the Perth Botanical Gardens as far back as 1876, but since the conditions surrounding the instruments and the situation of the station relative to Perth cannot be regarded as quite satisfactory, the more exact climate history of Perth did not properly commence until 1897, when the present observatory was established. During the period 1897 to 1911, the mean annual shade temperature of Perth was 64°, about a degree higher than that of Sydney and Adelaide, nearly 6° higher than that of Melbourne, and 10° above that of Hobart, but, on the other hand, 5° below that of Brisbane. The average temperature for the month of January is 73.5°, and for July 55.0°.

The extreme maximum shade record of 107.9° was registered in December, 1904, and the lowest minimum shade temperature was 35.3°, in August, 1908.

(ii.) *Adelaide.* In Adelaide the climate is drier and more sunny than in the other capitals, and, consequently, radiation is less hindered. The extremes of heat are consequently somewhat more marked, especially in the summer months. The mean shade temperature for January is 74.2°, and February 73.9°, and that for July 51.5°. Records of the temperature having reached 100° exist for each of the six summer months from October to March, and of having exceeded 110° exist for each of those months with the exception of March and October. The highest record of shade temperature in Adelaide is 116.3°, registered in January, 1858, and the lowest 32.0°, a range of 84.3°. The freezing point has only once been reached by the shade temperature thermometers, notwithstanding the fact that records have been kept for fifty-five years. Frosts have, however, occurred on the grass (four feet below the shade thermometers) at various times between the beginning of April and the end of November.

(iii.) *Brisbane.* In Brisbane the monthly mean shade temperature ranges from 77.1° in January to 58.0° in July, a difference of 19.1°. The extremes have varied from 108.9° in January, 1902, to 36.1° in July, 1894 and 1896, viz., through a range of 72.8°.

(iv.) *Sydney.* In Sydney the highest monthly mean is 71.6°, recorded in January, while the lowest, again in July, is 52.3°, giving a range of 19.3°.

The extremes of shade temperature recorded at Sydney over a period of half a century are 108.5° in January, 1896, and 35.9° in July, 1890, i.e., a range of 72.6°.

(v.) *Melbourne.* In Melbourne the January mean shade temperature averages 67.5°, and that of July 48.5°, the highest reading ever recorded being 111.2° in January, 1862, and the lowest 27.0° in July, 1869.

(vi.) *Hobart.* The mean temperature for the hottest month at Hobart is 62.2° in February, and that of the coldest 45.7°, in July, the highest reading ever recorded being 105.2° in December, 1897, and the lowest 27.7° in July, 1895, nearly a degree higher than the lowest experienced in Melbourne.

(vii.) *Hottest and Coldest Parts.* A comparison of the temperatures recorded at coast and inland stations shews that, in Australia as in other continents, the range increases with increasing distance from the coast.

In the interior of Australia, and during exceptionally dry summers, the temperature occasionally reaches or exceeds 120° in the shade, and during the dry winters the major

portion of the country to the south of the tropics is subject to ground frosts. An exact knowledge of temperature disposition cannot be determined until the interior becomes more settled, but from data procurable, it would appear that the hottest area of the continent is situated in the northern part of Western Australia about the Marble Bar and Nullagine goldfields, where the maximum shade temperature during the summer sometimes exceeds 100° for days, and even weeks continuously. The coldest part of the Commonwealth is the extreme south-east of New South Wales and extreme east of Victoria, namely, the region of the Australian Alps. Here the temperature seldom, if ever, reaches 100° even in the hottest of seasons.

In Tasmania also, although occasionally hot winds may cross the Straits and cause the temperature to rise to 100° in the low-lying parts, yet the island as a whole enjoys a most moderate and equable range of temperature throughout the year.

(viii.) *Monthly Maximum and Minimum Temperatures.* The mean monthly maximum and minimum temperatures can be best shewn by means of graphs, which exhibit the nature of the fluctuation of each for the entire year. In the diagram (on page 87) for nine representative places in Australia, the upper heavy curves shew the mean maximum, the lower heavy curves the mean minimum temperatures based upon daily observations. On the same diagram the thin curves shew the relative humidities (see next paragraph).

6. Relative Humidity.—Next after temperature the degree of humidity may be regarded as of great importance as an element of climate; and the characteristic differences of relative humidity between the various capitals of Australia call for special remark. For six representative places the variations of humidity are shewn on the graph on page 87, which gives results based upon daily observations of the dry and wet bulb thermometers. Hitherto difficulties have been experienced in many parts of Australia in obtaining satisfactory observations for a continuous period of any length. For this reason it has been thought expedient to refer to the record of humidity at first order stations only, where the results are thoroughly reliable. Throughout, the degree of humidity given will be what is known as *relative humidity*, that is, the percentage of aqueous vapour actually existing to the total possible if the atmosphere were saturated.

(i.) *Perth.* At Perth the mean annual humidity at 9 a.m. is 63; the greatest monthly mean is 84, and is in June, and the lowest 45, in January.

(ii.) *Adelaide.* At Adelaide the mean annual humidity at 9 a.m. is only 54; the mean monthly humidity has been as low as 33 in January and December, and as high as 87 in July.

(iii.) *Brisbane.* In Brisbane the mean annual humidity at 9 a.m. is 68; the lowest monthly mean recorded is 47, and is in September, 1905, and the highest 85 in the months of March, 1890, and May, 1891.

(iv.) *Sydney.* In Sydney the mean annual humidity at 9 a.m. is 73; the greatest monthly average, which occurred in May, 1891, was 90, while the lowest monthly mean, 52, occurred in the month of December, 1911.

(v.) *Melbourne.* The mean annual humidity derived from the 9 a.m. 3 p.m. and 9 p.m. observations in Melbourne is 71; the greatest monthly average 88, in June and July, 1858, and the lowest 49, in December, 1908.

(vi.) *Hobart.* Hobart's mean annual humidity at 9 a.m. is 70, the highest monthly mean 92, in June, and the lowest 50, in November.

From the above results, it is seen that, in respect of relative humidity, Sydney has the first place, while Melbourne, Hobart, Brisbane, Perth, and Adelaide follow in the order stated, Adelaide being the driest. The graphs on page 87 shew the annual variations in humidity. It will be observed that the *relative humidity* is ordinarily but not invariably great when the temperature is low.

7. **Evaporation.**—The rate and quantity of evaporation in any territory is influenced by the prevailing temperature, and by atmospheric humidity, pressure and movement. In Australia the question is of perhaps more than ordinary importance; since in its drier regions water has often to be conserved in “tanks”¹ and dams. The magnitude of the economic loss by evaporation will be appreciated from the following records, which have been obtained from either jacketed tanks sunk into the ground, or in the case of Laverton (W.A.) from a jacketed vessel (8 inches in diameter) exposed on the surface.

The average total evaporation at Sydney is 36.82 inches; at Melbourne, 38.31 inches; at Adelaide, 54.29 inches; and at Perth, 66.03 inches, these results being based respectively upon 32, 39, 42, and 13 years’ observations. For Brisbane the evaporation for the year 1910 was 48.61 inches, and for 1911 49.34 inches. At Hobart the mean for the two years was 28.86 inches.

In the interior of New South Wales the annual evaporation is as high as 84 inches; in Central Australia at Alice Springs the average for 20 years is 97.10 inches; at Coolgardie, Western Australia, the mean for thirteen years is 87.37 inches, and at Laverton, in the same State, the yearly amount derived from the last 6 years is 146.57 inches, or over 12 feet.

(i.) *Monthly Evaporation Curves.* The curves showing the mean monthly evaporation in various parts of the Commonwealth will disclose how characteristically different are the amounts for the several months in different localities. The evaporation for characteristic places is shown on diagram shewing also rainfalls (see page 88).

(ii.) *Loss by Evaporation.* In the interior of Australia the possible evaporation is often greater than the actual rainfall. Since, therefore, the loss by evaporation depends largely on the exposed area, tanks and dams so designed that the surface shall be a minimum are advantageous. Similarly, the more protected from the direct rays of the sun and from winds, by means of suitable tree planting, the less will be the loss by evaporation: these matters are of more than ordinary concern in the drier districts of Australia.

8. **Rainfall.**—As even a casual reference to climatological maps, indicating the distribution of rainfall and prevailing direction of wind, would clearly shew, the rainfall of any region is determined mainly by the direction and route of the prevailing winds, by the varying temperatures of the earth’s surface over which they blow, and by the physiographical features generally.

Australia lies within the zone of the south-east and westerly trade winds. The southern limit of the south-east trade strikes the eastern shores at about 30° south latitude. Hence, we find that, with very few exceptions, the heaviest rains of the Australian continent are precipitated along the Pacific slopes to the north of that latitude, the varying quantities being more or less regulated by the differences in elevation of the shores and of the chain of mountains, upon which the rain-laden winds blow, from the New South Wales northern border to Thursday Island. The converse effect is exemplified on the north-west coast of Western Australia from the summer south-east trade winds. Here the prevailing winds, blowing from the interior of the continent instead of from the ocean, result in the lightest coastal rain in Australia.

The westerly trade winds, which skirt the southern shores, are responsible for the very reliable, although generally light, rains enjoyed by the south-western portion of Western Australia, by the south-eastern agricultural areas of South Australia, by a great part of Victoria, and by the whole of Tasmania.

(i.) *Factors determining Distribution and Intensity of Rainfall.* The distribution and intensity of rainfall in the interior of the continent, and also to some extent in the areas already mentioned, are governed by the seasonal peculiarities of three distinct atmospheric control systems, the most important of which is, undoubtedly, the anticyclonic stream. This stream, which girdles the earth and embraces approximately the region between 15° and 40° south latitude, breaks up into vast elliptically-shaped bodies

1. In Australia artificial storage ponds or reservoirs are called “tanks.”

of circulating atmosphere, measuring frequently 3000 miles in their major and 2000 miles in their minor axes. In passing over Australia from west to east, these great bodies of circulating air cause moist-laden winds to sweep across the continent from the surrounding oceans. The front-circulation brings in winds from the Southern Ocean, and the rear-circulation those from the equatorial seas.

The rain-invoking agent second in order of importance because of its reliability is the well-known "V-shaped depression." The sphere of operation of this latter disturbance is ordinarily the southern half of the continent, although occasionally it may extend its influence to tropical latitudes. The western half of this type of disturbance, with a southerly wind circulation, is the portion from which rain is most frequently to be expected, but occasionally good falls of rain, attended with electrical manifestations, are liberated from the warm eastern portion.

The third agent associated with the production of rain is the tropical depression more popularly known as the "monsoonal depression." This disturbance may be in active evidence for a succession of seasons, and then be conspicuously absent for a number of years, thus raising the question whether, after all, it can be regarded as in any way a distinctive feature of Australian meteorology.

When these disturbances are actively operative in the production of rain, the effect on the country generally, and the economic results for the succeeding season, are very pronounced. The interior of the continent becomes transformed. The plains, which ordinarily have so profound an effect on the heat winds of the summer, are deluged with rain, and respond immediately with an astonishingly luxurious growth of grass and herbage. The air is both tempered in heat, and loses its dryness for considerable periods after their visitations.

The distribution of rain by monsoonal disturbances is, however, very capricious in comparison with that precipitated by the southern "depressions." During some seasons the whole of the northern half of the continent will benefit to a fairly uniform degree; at another time some special region will be favoured. A remarkable example of this peculiarity occurred in 1902, for when monsoonal rains were copiously falling over the major portion of Western Australia, the eastern half of the continent was suffering from severe drought conditions.

During other seasons, tongue-shaped regions extending southwards from the northern shores of the continent will be particularly favoured in regard to rain. These regions may extend to the interior of Western Australia, and simultaneously others may occur in the Central Territory, in Western Queensland, and in the interior of New South Wales.

It is thus obvious that different parts of the continent are mainly dependent upon forms of atmospheric disturbances for what may be called their fundamental rains, and since there is a seasonal tendency for a particular class of storms to predominate, it rarely happens that any year passes in which the rains are universally good. Again, the condition of drought can hardly affect the whole of the continent at the same time. Nevertheless a more than ordinarily fortunate condition in one part of the continent usually implies drought conditions in another, or *vice-versâ*. Thus in New South Wales, monsoonal rains, so beneficial to its north-western districts, rarely extend during the same season to coastal areas, or to Southern Riverina. For this reason it may happen occasionally that sheep may with advantage be sent 500 or 600 miles from the coast for feed and water. Should the southern or antarctic low-pressures be the predominating influence, the country to the south of the Murrumbidgee River is benefitting at the expense of the remainder of the State. A good coastal season ordinarily depends upon an anticyclonic control; when such exists, the country west of the tablelands usually wants water.

A good season for Australia as a whole is dependent upon many circumstances. Not only must the main rain-giving storms be well represented, but other favourable conditions must also coexist. The general rate of translation of the atmosphere across the continent is a factor of the utmost importance. Another is the latitude the cyclones and

anti-cyclones are moving in, and, further, the daily or periodic surgings of high and low pressures to and from the equator are also factors of considerable moment.

(ii.) *Time of Rainfall.* Monsoonal rains affect the northern parts of the continent in the summer months, and may continue with diminishing energy for nearly six months of the year. As they penetrate into higher latitudes in a south-easterly direction the period of action is delayed, but is not shortened, though the quantities of the fall materially lessen. Antarctic rains are experienced during the winter months of the year, the resultant quantities being reliable and consistently regular. The heaviest totals from this source are precipitated on the west coast of Tasmania. Thus at Mount Lyell the total for one year exceeded 140 inches, and even the average is 115.82 inches.

Anticyclonic rains occur at all times of the year, but more markedly from March to September. They benefit particularly the southern area of the continent, and are responsible for many of the heaviest rainfalls and floods on the coastal districts of New South Wales.

(iii.) *Wettest and Driest Regions.* The wettest known part of Australia is on the north-east coast of Queensland, where three stations situated on, or adjacent to, the Johnstone and Russell Rivers have an average annual rainfall of between 150 and 166 inches. The maximum and minimum falls there are:—Goondi, 241.53 in 1894 and 76.24 inches in 1902, or a range of 165.29 inches; Innisfail, 211.24 in 1894 and 69.87 inches in 1902, or a range of 141.37 inches; Harvey Creek, 238.45 in 1901 and 80.47 inches in 1902, or a range of 157.98 inches.

On three occasions more than 200 inches have been recorded at Goondi, the last of these being in 1910 when 204.82 inches were registered. The record at this station covers a period of 19 years.

Harvey Creek in the shorter period of 15 years has twice exceeded 200 inches, the total for 1910 being 201.28 inches.

The driest known part of the continent is about the Lake Eyre district in South Australia (the only part of the continent below sea level), where the annual average is but 5 inches, and where it rarely exceeds 10 inches for the twelve months.

The inland districts of Western Australia have until recent years been regarded as the driest part of Australia, but authentic observations taken during the past decade at settled districts in the east of that State shew that the annual average is from 10 to 12 inches.

(iv.) *Quantities and Distribution of Rainfall generally.* The departure from the normal rainfall increases greatly and progressively from the southern to the northern shores of the continent, and similarly also at all parts of the continent, subject to capricious monsoonal rains, as the comparisons hereunder will shew. The general distribution is best seen from the map on page 93, shewing the areas subject to average annual rainfalls lying between certain limits. The areas enjoying varying quantities of rainfall determined from the latest available information are shewn in the following table:—

DISTRIBUTION OF AVERAGE RAINFALL.

Average Annual Rainfall.	N.S.W.	Victoria.	Queensland.	South Aust.	Northe'n Territ'y.	Western Aust.	Tasmania.	Commonwealth.
	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.
Under 10 inches	44,997	nil	126,390	317,600	138,190	513,653	nil	1,140,830
10—15 "	77,268	19,912	132,500	33,405	141,570	232,815	nil	637,470
15—20 "	57,639	12,626	118,650	14,190	62,920	89,922	nil	355,947
20—30 "	77,202	29,317	175,390	13,827	93,470	95,404	4,242	488,852
30—40 "	80,700	14,029	67,310	984	40,690	40,750	7,897	201,860
Over 40 "	22,566	12,000	50,260	64	46,780	3,376	14,576	149,622
Total area ...	310,372	87,884	670,500	380,070	523,620	975,920	26,215	2,974,581

NOTE.—Tasmania and Queensland are subject to alteration.

Referring first to the southern capitals, it may be noted that the average at Melbourne from 68 years' records is 26.28 inches; the maximum 44.25, and minimum 15.61; the range therefore is 28.64 inches. At Adelaide the average determined from 73 years' totals is 21.06, the maximum 30.87, the minimum 13.43 and the range therefore 17.44 inches. At Hobart 23.57 inches is the average annual rainfall for 69 years, 40.67 being the highest total for one year, and 13.43 the lowest; thus 27.24 inches is the extreme range. The average from 36 years' records for Perth is 33.26 inches, 46.73 being the maximum and 20.48 inches the minimum; the range is therefore 26.25 inches. These figures appear to constitute an exception to the general rule, but it should be mentioned as a possible explanation that records have there been taken only since 1876, whereas the records at the other cities date from 1840 or thereabouts.

Continuing the comparison of rainfall figures, Sydney's average annual total derived from 72 years' records is 48.29 inches, its maximum 82.81 in 1860, and minimum 21.48 in 1849, thus the range is 61.33 inches. At Brisbane the disparities are greater still. There the average from 62 years' totals is 46.79 inches—a trifle lower than that of Sydney—the annual maximum was 88.26 inches in 1893, the minimum 16.17 inches in 1902, and the range therefore 72.09 inches.

In order to shew how the rainfall is distributed throughout the year in various parts of the continent, the figures of representative towns have been selected. Darwin, typical of the Northern Territory, shews that in that region nearly the whole of the rainfall occurs in the summer months, while little or nothing falls in the middle of the year. The figures of Perth, as representing the south-western part of the continent, are the reverse, for while the summer months are dry, the winter ones are very wet. In Melbourne and Hobart the rain is fairly well distributed throughout the twelve months, with a maximum in October in the former, and in November in the latter. The records at Alice Springs and Daly Waters indicate that in the central parts of Australia the wettest months are in the summer and autumn. In Queensland, as in the Northern Territory, the heaviest rains fall in the summer months, but good averages are also maintained during the other seasons.

On the coast of New South Wales, the first six months of the year are the wettest, with slight excesses in April and July; the averages during the last six months are fair and moderately uniform. In general it may be said that one-fourth of the area of the continent, principally in the eastern and northern parts, enjoys an annual average rainfall of from 20 to 50 inches, the remaining three-fourths receiving generally from 10 to 15 inches.

(v.) *Curves of Rainfall and Evaporation.* The relative amounts of rainfall and evaporation at different times through the year are best seen by referring to the graphs for a number of characteristic places. It will be recognised at once how large is the evaporation when water is fully exposed to the direct rays of the sun, and to wind, etc.

(vi.) *Tables of Rainfall.* The table of rainfall for a long period of years for each of the various Australian capitals affords information as to the variability of the fall in successive years, and the list of the more remarkable falls furnishes information as to what may be expected on particular occasions.

RAINFALL AT THE AUSTRALIAN CAPITALS, 1840 to 1911.

Year.	PERTH.			ADELAIDE.			BRISBANE.			SYDNEY.			MELBOURNE.			HOBART.		
	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1840	...	...	...	24.23	99	...	29.32	...	...	58.52	150	...	32.57	...	...	...	...	...
1	...	...	...	17.96	93	...	49.81	...	...	76.31	142	...	30.18	...	...	13.95	...	...
2	...	...	...	20.32	122	...	28.81	...	...	43.92	137	...	31.16	...	...	23.60	...	...
3	...	...	...	17.19	104	...	51.67	...	...	62.78	168	...	21.54	...	...	13.43	...	...
4	...	...	...	16.88	136	...	63.20	...	...	70.67	167	...	30.74	...	...	26.23	...	...
5	...	...	...	18.83	125	...	39.09	...	...	62.03	132	...	23.93	...	...	16.68	...	...
6	...	...	...	96.89	114	...	31.41	...	41.63	43.83	139	...	30.53	...	...	21.96	...	...
7	...	...	...	27.61	100	...	...	...	(7 yr.)	42.90	142	...	30.18	...	...	14.46	...	...
8	...	...	...	19.74	114	21.07	42.59	...	...	59.17	137	58.33	33.15	...	28.22	23.62	...	19.24
9	...	...	...	25.44	110	(9 yr.)	...	...	...	21.48	140	(9 yr.)	44.25	...	(9 yr.)	33.51	...	(8 yr.)
1850	...	...	...	19.56	84	...	...	...	...	44.88	157	...	26.98	...	...	14.51	...	...
1	...	...	...	30.86	128	...	...	...	...	35.14	142	...	...	...	...	17.98	...	...
2	...	...	...	27.44	118	...	...	...	...	43.78	145	...	...	...	...	23.62	...	...
3	...	...	...	27.08	128	...	...	...	...	46.11	130	...	...	...	...	14.52	...	...
4	...	...	...	15.35	105	...	...	...	...	29.28	136	...	...	...	...	30.54	...	...
5	...	...	...	23.15	124	...	...	...	...	52.85	138	...	28.21	...	...	18.25	...	...
6	...	...	...	24.93	118	...	...	...	...	43.31	116	...	29.76	134	...	22.73	151	...
7	...	...	...	22.15	105	...	...	...	...	50.95	135	...	28.90	138	...	17.14	113	...
8	...	...	...	21.55	107	23.75	43.00	...	...	39.60	139	40.74	26.01	158	...	33.07	129	22.59
9	...	...	...	14.85	95	...	35.00	...	...	42.06	128	...	21.82	156	...	23.31	...	...
1860	...	...	...	19.67	119	...	54.63	144	...	82.81	182	...	25.38	133	...	21.05	...	...
1	...	...	...	24.04	147	...	69.45	155	...	59.36	157	...	29.16	159	...	28.19	...	...
2	...	...	...	21.85	119	...	28.27	98	...	23.98	111	...	22.08	139	...	21.72	...	...
3	...	...	...	23.68	145	...	68.83	146	...	47.08	152	...	36.42	165	...	40.67	...	...
4	...	...	...	19.75	121	...	47.00	114	...	69.12	187	...	27.40	144	...	28.11	...	...
5	...	...	...	15.51	108	...	24.11	52	...	36.29	128	...	15.94	119	...	23.07	...	...
6	...	...	...	20.11	116	...	51.18	142	...	36.81	149	...	22.41	107	...	23.55	...	...
7	...	...	...	19.05	112	...	61.04	112	...	59.68	126	...	25.79	133	...	22.27	...	...
8	...	...	...	19.99	113	19.85	35.98	110	47.55	43.05	127	50.02	18.27	190	24.47	18.08	...	25.00
9	...	...	...	14.74	117	...	54.39	114	...	48.19	134	...	24.58	139	...	23.87	...	...
1870	...	...	...	23.84	119	...	79.06	154	...	64.22	178	...	33.77	129	...	27.53	...	...
1	...	...	...	23.25	137	...	45.45	119	...	52.27	141	...	30.17	125	...	18.25	131	...
2	...	...	...	22.66	146	...	49.22	131	...	37.12	161	...	32.52	136	...	31.76	160	...
3	...	...	...	21.00	139	...	62.02	138	...	73.40	176	...	25.61	134	...	23.43	157	...
4	...	...	...	17.23	127	...	38.71	135	...	63.60	173	...	28.10	134	...	24.09	138	...
5	...	...	...	29.21	157	...	67.03	162	...	46.25	153	...	32.87	158	...	29.25	181	...
6	28.73	100	...	13.43	110	...	53.42	130	...	45.69	156	...	24.04	134	...	23.63	...	...
7	20.48	103	...	24.95	135	...	30.28	131	...	59.66	147	...	24.10	124	...	20.82	...	...
8	39.72	143	29.64	22.08	112	21.24	56.33	134	53.59	49.77	129	54.02	25.36	116	28.11	29.76	...	25.24
9	41.34	106	(3 yr.)	20.69	130	...	67.30	157	...	63.19	167	...	19.28	127	...	21.07	...	...
1880	...	...	...	22.48	142	...	49.12	134	...	29.51	142	...	28.48	127	...	...	...	...
1	24.78	116	...	18.92	135	...	29.38	117	...	41.09	163	...	24.08	134	...	...	...	...
2	35.65	109	...	15.70	134	...	42.63	121	...	42.28	113	...	22.40	131	...	30.69	...	...
3	39.65	122	...	26.76	161	...	32.22	114	...	46.92	157	...	33.71	130	...	24.05	160	...
4	31.96	92	...	18.74	138	...	43.49	136	...	44.04	159	...	25.85	128	...	21.55	171	...
5	34.44	110	...	15.89	133	...	26.85	112	...	39.91	145	...	26.94	123	...	28.92	176	...
6	28.90	89	...	14.42	141	...	53.66	152	...	39.43	152	...	24.00	128	...	21.39	189	...
7	37.52	105	...	25.70	164	...	81.54	242	...	60.16	189	...	32.39	153	...	24.21	174	...
8	27.83	117	33.29	14.55	131	19.30	33.03	143	45.98	23.01	132	42.95	19.42	123	24.66	15.45	151	23.71
9	89.96	123	...	30.87	143	...	49.36	155	...	57.16	186	...	27.14	125	...	30.80	180	(8 yr.)
1890	46.73	126	...	25.78	139	...	73.02	162	...	81.42	184	...	24.24	140	...	27.51	173	...
1	30.33	93	...	14.01	113	...	41.68	143	...	55.30	200	...	26.73	126	...	23.25	160	...
2	31.23	122	...	21.53	137	...	64.98	146	...	69.26	189	...	24.96	124	...	18.62	...	...
3	40.12	145	...	21.49	129	...	88.26	147	...	49.90	208	...	26.80	140	...	27.46	146	...
4	23.72	103	...	20.78	134	...	44.02	143	...	38.22	188	...	22.60	138	...	27.39	151	...
5	33.01	123	...	21.28	130	...	59.11	105	...	31.86	170	...	17.04	131	...	25.40	119	...
6	31.50	103	...	15.17	121	...	44.97	121	...	42.40	157	...	25.16	124	...	21.61	136	...
7	27.17	106	...	15.42	119	...	42.53	115	...	42.52	136	...	25.85	117	...	20.45	153	...
8	31.76	118	33.55	20.75	116	20.71	60.06	131	56.80	43.17	149	51.12	15.61	102	23.61	20.40	164	24.29
9	32.40	107	...	18.84	119	...	38.85	141	...	55.90	172	...	28.87	116	...	20.68	170	...
1900	36.61	124	...	21.68	133	...	34.41	110	...	66.54	170	...	28.09	139	...	19.14	135	...
1	36.75	122	...	18.01	124	...	38.48	110	...	40.10	151	...	27.45	113	...	25.11	147	...
2	27.06	93	...	16.02	123	...	16.17	87	...	43.07	176	...	23.08	102	...	21.85	151	...
3	35.69	140	...	25.47	134	...	49.27	136	...	38.62	169	...	28.43	130	...	25.86	139	...
4	34.35	125	...	20.31	117	...	33.23	124	...	45.93	155	...	29.72	128	...	22.41	139	...
5	34.61	116	...	22.28	131	...	36.76	108	...	35.03	144	...	25.64	129	...	32.09	168	...
6	32.97	121	...	26.51	127	...	42.84	125	...	31.89	159	...	22.29	114	...	23.31	155	...
7	40.12	132	...	17.78	125	...	31.46	119	...	31.32	132	...	22.26	102	...	25.92	167	...
8	30.52	106	34.05	24.56	125	21.15	44.01	125	36.55	45.65	168	43.41	17.72	130	25.36	16.50	149	23.29
9	39.11	107	...	27.69	138	...	34.07	121	...	32.27	177	...	25.86	171	...	27.29	170	...
1910	37.02	135	...	24.62	116	...	49.00	133	...	46.91	160	...	24.61	167	...	25.22	205	...
1	23.38	108	...	15.99	127	...	35.15	128	...	50.24	155	...	36.61	168	...	26.78	193	...
Aver.	...	...	33.26	...	...	21.06	...	...	46.79	...	...	48.29	...	...	6.28	...	...	23.57
No. of Yrs.	(36)	(73)	(62)	(72)	(68)	(69)												

NOTE.—The above average Rainfall figures for Brisbane, Sydney, and Melbourne differ slightly from the mean annual falls given in the Climatological Tables on pp. 99-101, which are for a less number of years.

9. **Remarkable Falls of Rain.**—The following are the more remarkable falls of rain in the States of New South Wales, Queensland, Western Australia, and South Australia, which have occurred within a period of twenty-four hours :—

HEAVY RAINFALLS, NEW SOUTH WALES, UP TO 1911 INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Albion Park ...	8 Feb., 1895	10.00	Kempsey ...	10 Mar., 1893	10.34
" " ...	13 Jan., 1911	10.95	Leconfield... ..	9 " "	14.53
Albury ...	14 Feb., 1898	10.70	Liverpool ...	23 Feb., 1874	10.39
Alme Dorrigo ...	22 Jan., 1893	10.27	Macksville* ...	23 Feb., 1908	10.00
Anthony ...	28 Mar., 1887	17.14	Madden's Creek ...	2 " "	10.36
" " ...	15 Jan., 1890	13.13	" " " "	13 Jan., 1911	18.68
Arnold Grove ...	28 May, 1889	11.13	Maitland W. ...	9 Mar., 1893	14.79
" " ...	20 Mar., 1892	10.08	Major's Creek ...	14 Feb., 1898	12.32
Araluen ...	14 Feb., 1898	10.51	Milton ...	13 Jan., 1911	10.41
" " ...	15 " "	13.36	Mittagong... ..	6 Mar., 1893	11.71
Bellawongarah ...	13 Jan., 1911	10.92	Morpeth ...	9 " "	21.52
Berry ...	13 " "	12.05	Mount Kembla ...	14 Feb., 1898	10.25
Billambil ...	14 Mar., 1894	12.94	" " " "	2 " "	1908
Bomaderry... ..	13 Jan., 1911	13.03	" " " "	13 Jan., 1911	18.25
Bowral ...	6 Mar., 1893	11.94	Mount Pleasant ...	14 " "	10.40
Bowraville ...	22 June, 1898	11.50	Myra Vale ...	14 Feb., 1898	10.00
Broger's Creek ...	14 Feb., " "	20.05	Nambucca Heads ...	3 Apr., 1905	10.62
" " " "	19 July, 1910	12.22	Nepean Tunnel ...	14 Feb., 1898	12.30
" " " "	13 Jan., 1911	20.83	Nethercote ...	14 Jan., 1911	11.32
Bulli Mountain ...	19 Mar., 1894	10.45	Newcastle... ..	19 Mar., 1871	11.17
" " " "	13 Feb., 1898	17.14	" " " "	9 " "	1893
Burwood ...	28 May, 1889	11.75	" " " "	24 Feb., 1908	10.02
Camden ...	11 July, 1904	10.90	Nowra ...	11 July, 1904	11.50
Camden Haven ...	22 Jan., 1895	12.23	" " " "	13 Jan., 1911	13.00
Canley Vale ...	28 May, 1889	10.06	Parramatta ...	28 May, 1889	11.94
" " " "	20 Mar., 1892	10.85	" " " "	20 Mar., 1892	11.01
Castle Hill... ..	28 May, 1889	13.49	Port Macquarie ...	9 Nov., 1887	10.76
Cockle Creek ...	23 Feb., 1908	10.45	Port Stephens ...	9 Feb., 1889	10.15
Colombo Lyttleton ...	5 Mar., 1893	12.17	Prospect ...	28 May, " "	12.37
Ondong ...	27 " "	18.66	Raymond Terrace ...	28 Sep., 1903	10.32
" " " "	15 Jan., 1890	11.50	Richmond ...	28 May, 1889	12.18
Cookville ...	1 Apr., 1892	11.31	Robertson... ..	14 Feb., 1898	10.00
Coramba ...	11 June, 1893	10.83	" " " "	10 July, 1904	10.50
Cordeaux River ...	26 Feb., 1873	10.98	Rooty Hill ...	27 May, 1889	11.85
" " " "	3 " "	11.51	Rylstone ...	28 " "	10.26
" " " "	14 Feb., 1898	22.58	Seven Oaks ...	22 June, 1898	11.06
" " " "	31 Aug., 1906	10.31	Springwood ...	7 Mar., 1894	10.55
" " " "	13 Jan., 1911	14.52	Stockyard Mount ...	13 Jan., 1911	11.54
Cudgen ...	15 Mar., 1894	10.23	Taree ...	28 Feb., 1892	12.24
Dapto West ...	14 Feb., 1898	12.05	Terara ...	26 " "	1873
" " " "	13 Jan., 1911	10.37	Tomago ...	9 Mar., 1893	13.76
Darkes' Forest ...	8 Feb., 1895	11.10	Tongarra ...	9 July, 1904	11.10
Dunheved ...	28 May, 1889	12.40	Tongarra Farm ...	14 Feb., 1898	15.12
Eden ...	4 " "	1875	Towamba ...	5 Mar., 1893	20.00
Fernmount ...	2 Feb., 1890	10.36	Tweed Heads ...	14 Jan., 1890	10.53
" " " "	2 June, 1903	11.29	" " " "	14 Mar., 1894	11.40
Goorangoola ...	9 Mar., 1893	10.34	Trial Bay ...	9 " "	1893
Guy Fawkes ...	2 June, 1903	11.30	White Swamp ...	12 Jan., 1911	10.24
Hercynia ...	28 May, 1889	11.85	Wollongong ...	26 Feb., 1873	11.00
Holy Flat ...	12 Mar., 1887	12.00	" " " "	5 Apr., 1882	10.00
" " " "	28 Feb., 1892	12.24	Woolgoolga ...	11 June, 1893	10.33
Jamberoo ...	14 " "	1898	Yellow Rock ...	14 Feb., 1898	11.69
" " " "	13 Jan., 1911	10.89	South Head ...		
Kareela ...	20 Oct., 1902	11.73	(near Sydney)... ..	29 Apr., 1841	20.12
Kembla Heights ...	13 Jan., 1911	17.46	" " " "	16 Oct., 1844	20.41

6.50 inches fell in 2 hours.

HEAVY RAINFALLS, QUEENSLAND, UP TO 1911 INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins			ins.
Anglesey ...	26 Dec., 1909	18.20	Coen ...	1 Apr., 1910	10.71
Ascot ...	14 Mar., 1908	11.34	Collaroy ...	30 Jan., 1896	14.25
Ayr ...	20 Sep., 1890	14.58	" ...	30 " 1910	10.25
" ...	25 Mar., 1891	10.19	Cooktown ...	22 " 1903	12.49
" ...	26 Jan., 1896	10.50	" ...	19 " 1907	11.70
Beenleigh ...	21 " 1887	11.30	" ...	1 Apr., 1911	11.11
" ...	14 Mar., 1908	10.40	Cooran ...	1 Feb., 1893	13.62
Bloomsbury ...	14 Feb., 1893	17.40	" ...	9 June, " 1910	10.12
" ...	27 Jan., 1896	10.52	" ...	26 Dec., 1908	14.08
" ...	10 " 1901	16.62	Cooroy ...	9 June, 1893	13.60
" ...	4 Mar., 1906	11.36	" ...	10 Jan., 1898	13.50
" ...	9 Jan., 1908	11.30	" ...	6 Mar., " 1904	10.04
Boggo Road, Junction	14 Mar., 1908	10.42	Cressbrook ...	16 Feb., 1893	10.65
Botanic Gardens, Bris.	"	10.80	Crohamhurst		
Bowen ...	13 Feb., 1893	14.65	(Blackall Range)	31 Jan., " 1907	10.78
" ...	20 Jan., 1894	11.11	"	2 Feb., " 1911	35.71
Bowen Park ...	16 Feb., 1893	10.38	"	9 June, " 1910	13.31
" ...	14 Mar., 1908	11.50	"	9 Jan., 1898	19.55
Brisbane ...	21 Jan., 1887	18.31	"	6 Mar., " 1901	16.01
" ...	14 Mar., 1908	11.18	"	26 Dec., 1909	13.85
Bromby Park (Bowen)	14 Feb., 1893	13.28	Crow's Nest ...	2 Aug., 1908	11.17
"	20 Jan., 1894	11.20	Croydon ...	29 Jan., 1908	15.00
Brookfield " "	14 Mar., 1908	14.95	Cryna (Beaudesert)...	21 " 1887	14.00
Buderim Mountain ...	11 Jan., 1898	26.20	Donaldson		
"	9 Mar., 1898	11.10	(now Granada)	27 Jan., 1891	11.29
Bulimba (Brisbane)...	16 Feb., 1893	10.40	"	8 " 1911	13.50
Bundaberg ...	31 Jan., 1893	10.15	"	9 " " 1910	14.30
Burketown ...	15 " 1891	13.58	Dungeness ...	16 Mar., 1893	22.17
"	12 Mar., 1903	14.52	"	19 Jan., 1894	11.84
Bustard Head ...	18 Feb., 1888	10.14	"	17 Apr., " 1901	14.00
"	30 Jan., 1893	11.85	Dunira ...	9 Jan., 1898	18.45
Caboolture ...	21 " 1887	10.00	"	6 Mar., " 1901	15.95
"	10 " 1898	10.28	Eddington (Cloncyry)	23 Jan., 1891	10.33
Cairns ...	11 Feb., 1889	14.74	Emu Park ...	31 " 1893	10.00
"	21 Apr., " 1901	12.40	Enoggera Railway ...	14 Mar., 1908	12.14
"	5 " 1891	14.08	Reservoir	" " " 1901	10.98
"	9 Jan., 1892	10.56	Ernest Junction ...	" " " 1901	13.00
"	4 " 1909	11.56	Esk ...	21 Jan., 1887	10.70
"	3 " 1911	11.97	"	14 Mar., 1908	11.12
"	11 Feb., " 1901	15.17	Fassifern ...	21 Jan., 1887	10.20
"	17 Mar., " 1901	10.35	Flat Top Island ...	22 Dec., 1909	12.96
"	1 Apr., " 1901	11.71	Floraville ...	6 Jan., 1897	10.79
"	2 " " 1901	20.16	"	11 Mar., 1903	12.86
Caloundra ...	21 Jan., 1887	10.50	Geraldton		
Cape Capricorn ...	17 " 1905	10.16	(now Innisfail)	11 Feb., 1889	17.13
Cape Grafton ...	5 Mar., 1896	13.37	"	31 Dec., " 1901	12.45
Cardwell ...	18 " 1887	10.15	"	25 Jan., 1892	11.10
"	30 Dec., 1889	12.00	"	6 Apr., 1894	16.02
"	2 Jan., 1890	10.06	"	3 Mar., 1896	11.42
"	23 Mar., " 1901	12.00	"	7 " 1899	10.25
"	18 " 1904	18.24	"	18 Apr., " 1901	13.20
"	3 Apr., 1911	12.84	"	24 Jan., 1900	15.22
Cedar Pocket ...	26 Dec., 1909	11.36	"	6 " 1901	11.35
Central Kin Kin ...	"	10.17	"	29 Dec., 1903	21.22
Chiefswood ...	14 Mar., 1908	11.01	"	17 Mar., 1904	10.35
Childers ...	6 " 1898	11.28	"	30 Jan., 1908	11.76
Clare ...	26 Jan., 1896	15.30	"	14 " 1909	11.65
Cleveland ...	13 " 1910	10.13	"	11 Feb., 1911	14.48
"	2 June, " 1901	11.20	"	1 Apr., " 1901	12.35
Coen ...	20 Apr., 1903	11.11	"	2 " " 1901	15.00

HEAVY RAINFALLS, QUEENSLAND—Continued.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Geraldton			Hillcrest (Mooloolah)	26 Dec., 1909	13.35
(now Innisfail)	3 Apr., 1911	11.25	Holmwood (Woodf'd)	2 Feb., 1893	16.19
Gin Gin ...	16 Jan., 1905	13.61	" "	10 Jan., 1898	12.40
Gladstone ...	18 Feb., 1888	12.37	Homebush	3 Feb., "	12.04
" "	31 Jan., 1893	14.62	" "	21 Mar., "	10.26
" "	4 Feb., 1911	18.83	" "	11 Jan., 1901	11.40
Glass Mountains	26 Dec., 1909	10.48	Howard	15 " 1905	19.55
Glen Broughton	5 Apr., 1894	18.50	Indooroopilly	14 Mar., 1908	10.28
Glen Prairie	18 " 1904	12.18	Ingham	18 Jan., 1894	12.60
Gold Creek Reservoir	16 Feb., 1893	11.16	" "	7 Apr., "	10.10
" "	14 Mar., 1908	12.50	" "	6 Jan., 1901	13.59
Goodna " "	21 Jan., 1887	11.00	" "	25 Dec., 1903	12.30
" "	14 Mar., 1908	11.03	Inkerman	21 Sep., 1890	12.93
Goondi Mill (Gerald'n)	20 Jan., 1892	11.10	Inneshowen		
" "	6 Apr., 1894	15.69	(Johnstone River)	30 Dec., 1889	14.01
" "	7 Mar., 1899	10.08	Inskip Point	13 Mar., 1892	10.65
" "	18 Apr., "	14.78	Isis Junction	6 " 1898	13.60
" "	24 Jan., 1900	13.30	Kamerunga (Cairns)	20 Jan., 1892	13.61
" "	6 " 1901	10.70	" "	23 Feb., 1894	10.10
" "	2 Mar., "	10.67	" "	6 Apr., "	14.04
" "	29 Dec., 1903	17.83	" "	5 " 1895	12.31
" "	17 Mar., 1904	10.00	" "	5 Mar., 1896	11.81
" "	21 " 1910	10.38	" "	8 " 1899	10.50
" "	10 Feb., 1911	17.68	" "	21 Apr., 1903	11.75
" "	31 Mar., "	12.38	" "	2 Jan., 1911	10.95
" "	1 Apr., "	13.60	" "	3 " "	10.25
Gympie	9 Mar., 1901	11.64	" "	11 Feb., "	13.07
Halifax	5 Feb., 1899	15.37	" "	17 Mar., "	10.30
" "	8 Mar., 1899	11.00	" "	1 Apr., "	14.20
" "	6 Jan., 1901	15.68	" "	2 " "	21.00
" "	8 Feb., "	10.50	Kilkivan Junction	10 Jan., 1898	11.08
" "	26 Mar., 1903	10.07	Kululu, Mackay	11 " 1901	11.70
" "	30 Jan., 1906	10.41	" "	12 " 1905	10.94
Hambledon Mill	7 " 1908	11.00	Kuranda	6 Mar., 1899	14.12
" "	13 " 1909	13.80	" "	20 Apr., 1903	14.16
" "	16 Feb., 1910	11.45	" "	14 Jan., 1909	12.37
" "	2 Jan., 1911	18.61	" "	27 " 1910	9.40
" "	10 Feb., "	13.97	" "	28 " "	9.28
" "	30 Mar., "	13.04	" "	3 " 1911	10.72
" "	31 " "	14.95	" "	11 Feb., "	16.30
" "	1 Apr., "	19.62	" "	17 Mar., "	15.10
Harvey Creek	8 Mar., 1899	17.72	" "	31 " "	18.60
" "	25 Jan., 1900	12.53	" "	1 Apr., "	24.30
" "	25 May, 1901	14.00	" "	2 " "	28.80
" "	14 Mar., 1903	12.10	Lake Nash	10 Jan., 1895	10.25
" "	21 Apr., 1903	10.10	" "	20 Mar., 1901	10.02
" "	11 Jan., 1905	16.96	Landsborough	2 Feb., 1893	15.15
" "	28 " 1906	12.29	" "	9 June, "	12.80
" "	20 " 1907	10.13	" "	9 Jan., 1898	9.54
" "	8 " 1908	10.31	" "	7 Mar., "	10.35
" "	30 " "	11.31	" "	26 Dec., 1909	14.00
" "	25 Mar., "	11.84	Low Island	10 Mar., 1904	15.07
" "	14 Jan., 1909	14.40	" "	16 Mar., 1911	10.15
" "	16 Feb., 1910	10.90	" "	31 " "	14.70
" "	3 Jan., 1911	27.75	" "	1 Apr., "	23.43
" "	11 Feb., "	12.88	Lucinda	4 Feb., 1899	11.10
" "	31 Mar., "	10.93	" "	17 " 1906	13.35
" "	1 Apr., "	13.61	" "	10 Mar., 1906	14.60
" "	2 " "	16.46	Lytton	21 Jan., 1887	12.85
Haughton Valley	26 Jan., 1896	18.10	" "	13 Mar., 1892	10.60

HEAVY RAINFALLS, QUEENSLAND—Continued.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Lytton ...	16 Feb., 1893	11.74	Nerang ...	15 „ 1892	12.35
„ ...	20 Mar., 1898	10.20	„ ...	14 Mar., 1908	10.95
Mackay ...	17 Feb., 1888	10.10	Netley(Rockhampton)	29 Jan., 1896	11.77
„ ...	15 „ 1893	10.46	Normanton ...	14 „ 1905	10.72
„ ...	8 „ 1893	11.95	North Pine ...	21 „ 1887	11.60
„ ...	5 Jan., 1904	10.45	„ ...	16 Feb., 1893	14.97
„ ...	23 Dec., 1909	13.96	Nundah ...	14 Mar., 1908	12.00
„ ...	12 Mar., 1910	10.31	One Mile, Gympie ...	10 „ 1901	11.40
Sugar Experimental			Oxenford ...	14 „ 1908	15.65
Farm, Mackay ...	23 Dec., 1909	12.00	Palmerville ...	1 Apr., 1911	11.55
Macnade Mill			Palmwoods ...	4 Feb., 1893	12.30
(Townsville) ...	28 Mar., 1891	10.61	„ ...	10 Jan., 1898	15.85
„ ...	15 „ 1893	10.50	„ ...	7 Mar., „	13.02
„ ...	18 Jan., 1894	12.56	„ ...	25 Dec., 1909	17.75
„ ...	17 Apr., „	14.26	Peachester ...	26 „ „	14.91
„ ...	5 Feb., 1899	15.20	Pinkenba ...	14 Mar., 1908	11.63
„ ...	6 Jan., 1901	23.33	Pittsworth ...	11 „ 1890	14.68
Maleny ...	14 Mar., 1908	10.95	Port Douglas ...	5 „ 1887	13.00
„ ...	26 Dec., 1909	14.76	„ „	12 Feb., 1888	10.00
Manly ...	14 Mar., 1908	11.90	„ „	20 Jan., 1892	11.50
Mapleton ...	„ „	14.29	„ „	23 Feb., 1894	10.25
„ ...	26 Dec., 1909	15.72	„ „	7 Apr., „	10.00
„ ...	4 Feb., 1911	10.07	„ „	10 Mar., 1904	16.34
Marlborough ...	17 „ 1888	14.24	„ „	29 Dec., „	10.67
„ ...	29 Jan., 1896	10.84	„ „	11 Jan., 1905	14.68
Mareeba ...	31 Mar., 1911	10.59	„ „	2 „ 1911	11.64
Mayne Junction ...	14 „ 1908	10.30	„ „	11 Feb., „	11.89
Mein ...	4 Apr., 1895	10.50	„ „	17 Mar., „	16.10
Milton ...	14 Mar., 1908	12.24	„ „	1 Apr., „	31.53
Mirani ...	12 Jan., 1901	16.59	Ravenswood ...	24 Mar., 1890	17.00
„ ...	28 Mar., 1903	10.16	„ ...	27 Jan., 1896	10.52
Molloy ...	16 „ 1911	11.50	Redcliffe ...	21 „ 1887	14.00
„ ...	30 „ „	10.00	„ ...	16 Feb., 1893	17.35
„ ...	31 „ „	20.02	„ ...	10 Jan., 1898	10.25
„ ...	1 Apr., „	20.00	Riverview ...	14 Mar., 1908	10.12
„ ...	2 „ „	20.00	Rockhampton ...	17 Feb., 1888	10.82
Monkira ...	1 Feb., 1906	11.61	„ ...	29 Jan., 1896	10.53
Mooloolah ...	13 Mar., 1892	21.53	Rosedale ...	6 Mar., 1898	12.60
„ ...	2 Feb., 1893	19.11	Sandgate ...	21 Jan., 1887	10.50
„ ...	9 June, „	11.50	„ ...	16 Feb., 1893	14.03
„ ...	6 Mar., 1898	14.43	Sherwood ...	14 Mar., 1908	11.08
Morningside ...	14 Mar., 1908	10.50	Somerset ...	28 Jan., 1903	12.02
Mount Chalmers ...	8 Feb., 1911	11.90	Southport ...	14 Mar., 1908	11.05
Mount Crosby ...	14 Mar., 1908	14.00	St. Helena ...	16 Feb., 1893	11.20
Mount Cuthbert ...	8 Jan., 1911	18.00	St. Helens (Mackay)	24 „ 1888	12.00
Mount Gravatt ...	14 Mar., 1908	10.80	„ ...	22 Mar., 1898	10.00
Mount Perry ...	24 Feb., 1887	10.00	St. Lawrence ...	17 Feb., 1888	12.10
Mourilyan ...	14 Jan., 1909	13.00	„ ...	30 Jan., 1896	15.00
„ ...	3 „ 1911	12.70	Sunnybank ...	14 Mar., 1908	11.40
„ ...	11 Feb., „	17.40	Tabragalba ...	21 Jan., 1887	10.00
„ ...	1 Apr., „	13.20	Tallebudgera ...	14 Mar., 1908	10.80
„ ...	2 „ „	10.59	Tambourine Mount'n	17 July, 1889	10.91
Mundoolun ...	21 Jan., 1887	17.95	Taringa ...	14 Mar., 1908	11.40
Mungar Junction ...	10 Mar., 1901	10.20	Tewantin ...	10 Jan., 1898	10.51
Murrarie ...	14 „ 1908	11.50	„ ...	30 Mar., 1904	12.30
Musgrave ...	6 Apr., 1894	13.71	„ ...	14 Apr., „	11.36
Nambour ...	9 Jan., 1898	21.00	The Hollow (Mackay)	23 Feb., 1888	15.12
„ ...	7 Mar., „	13.28	„ „	? Mar., 1891	10.89
„ ...	27 Dec., 1909	16.80	Thornborough ...	20 Apr., 1903	18.07
Nanango ...	9 June, 1893	10.00	Tierawoomba ...	2 Feb., 1898	10.36

HEAVY RAINFALLS, QUEENSLAND—Continued.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Tooolombah ...	29 Jan., 1896	11.70	Woombye ...	26 Dec., 1909	13.42
Toowong ...	14 Mar., 1908	11.60	Wynnum ...	14 Mar., 1908	11.95
Townsville ...	24 Jan., 1892	19.20	Yandina ...	1 Feb., 1893	20.08
" ...	28 Dec., 1903	15.00	" ...	9 June, "	12.70
Victoria Mill ...	6 Jan., 1901	16.67	" ...	9 Jan., 1898	19.25
Walkerston ...	12 " 1905	10.60	" ...	7 Mar., "	13.52
Walsh River ...	12 " 1903	10.22	" ...	28 Dec., 1909	15.80
" ...	1 Apr., 1911	13.70	Yarrabah ...	14 Jan., "	11.20
Woodford ...	2 Feb., 1893	14.93	" ...	3 " 1911	11.50
" ...	10 Jan., 1898	11.40	" ...	11 Feb., "	12.00
Woodlands (Yeppoon) ...	10 " 1889	10.00	" ...	2 Apr., "	30.65
" ...	26 Jan., 1890	10.22	Yeppoon ...	31 Jan., 1893	20.05
" ...	25 Mar., "	14.25	" ...	30 " 1896	11.02
" ...	31 Jan., 1893	23.07	" ...	8 " 1898	18.05
" ...	30 " 1896	11.91	" ...	8 Apr., 1904	10.70
" ...	9 Feb., "	13.97	" ...	3 Feb., 1906	14.90
" ...	7 Jan., 1898	14.50	" ...	" 1911	14.92
Woodstock ...	4 Nov., 1903	10.44	Zillmere ...	14 Mar., 1908	11.00
Woogaroo ...	14 Mar., 1908	11.20			

HEAVY RAINFALLS, SOUTH AUSTRALIA, UP TO 1911 INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Arltunga ...	1 Mar., 1910	1.02	Port Darwin ...	7 Jan., 1897	11.67
" ...	2 " "	1.42	Powell's Creek ...	25 Feb., 1910	2.31
" ...	3 " "	7.77	" ...	26 " "	1.21
" ...	4 " "	1.85	" ...	27 " "	8.19
" ...	5 " "	1.24	Tennant's Creek ...	26 " "	1.18
Borroloola ...	14 " 1899	14.00	" ...	27 " "	1.02
Lake Nash ...	21 " 1901	10.25	" ...	28 " "	9.22
Pine Creek ...	8 Jan., 1897	10.35			

HEAVY RAINFALLS, WESTERN AUSTRALIA, UP TO 1911 INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Balla Balla ...	20 Mar., 1899	6.00	Cossack ...	3 Apr., 1898	12.82
" ...	21 " "	14.40	" ...	15 " 1900	6.89
Boodarie ...	3 Jan., 1894	10.03	" ...	16 " "	13.23
" ...	4 " "	5.22	Croydon ...	3 Mar., 1903	12.00
" ...	21 Mar., 1899	14.53	Cocos Island ...	29 Nov., "	14.38
" ...	6 Feb., 1901	1.91	" ...	26 Dec., 1907	8.00
" ...	7 " "	9.16	" ...	27 " "	2.65
Bamboo Creek ...	22 Mar., 1899	10.10	" ...	8 July, 1908	10.21
Carlton ...	11 Jan., 1903	10.64	" ...	9 " "	2.75
Cherrabun ...	28 Apr., 1910	2.90	" ...	23 " "	2.40
" ...	29 " "	7.78	" ...	24 " "	7.00

HEAVY RAINFALLS, WESTERN AUSTRALIA—Continued.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
Cocos Island ...	25 July, 1908	3.85	Tambrey ...	3 Mar., 1903	ins.
Derby ...	29 Dec., 1898	13.09	Thangoo ...	17-19 Feb. '96	10.46
" ...	30 " "	7.14	" ...	28 Dec., 1898	11.15
Kerdiadary ...	7 Feb., 1901	12.00	" ...	20 Nov., 1910	7.40
Millstream ...	5 Mar., 1900	10.00	" ...	21 " "	4.56
Obagama ...	16 Feb., 1896	3.95	Whim Creek ...	2 Apr., 1898	7.08
" ...	17 " "	6.30	" ...	3 " "	29.41
Obagama ...	18 Feb., 1896	7.22	" ...	20 Mar., 1899	8.89
" ...	28 " 1910	12.00	" ...	21 " "	18.17
Point Torment ...	17 Dec., 1906	11.86	" ...	6 " 1900	10.03
Point Cloates ...	20 Jan., 1909	10.87	" ...	3 " 1903	10.44
Port Hedland ...	7 Feb., 1901	3.56	Wyndham ...	27 Jan., 1890	11.60
" ...	8 " "	9.55	" ...	11 " 1903	9.98
Quanbun ...	29 Apr., 1910	6.55	" ...	12 " "	6.64
" ...	30 " "	3.40	" ...	13 " "	4.20
Roebourne... ..	3 Apr., 1898	11.44	Yeeda ...	28 Dec., 1898	8.42
" ...	6 Mar., 1900	10.32	" ...	29 " "	6.88
Tambrey ...	6 " "	11.00	" ...	30 " "	6.12

10. **Snowfall.**—Light snow has been known to fall even as far north, occasionally, as latitude 31° S., and from the western to the eastern shores of the continent. During exceptional seasons it has fallen simultaneously over two-thirds of the State of New South Wales, and has extended at times along the whole of the Great Dividing Range, from its southern extremity in Victoria as far north as Toowoomba in Queensland. During the winter snow covers the ground to a great extent on the Australian Alps for several months, where also the temperature falls below zero Fahrenheit during the night, and in the ravines around Kosciusko and similar localities the snow never entirely disappears.

The antarctic "V"-shaped disturbances are always associated with our most pronounced and extensive snowfalls. The depressions on such occasions are very steep in the vertical area, and the apexes are unusually sharp-pointed and protrude into very low latitudes, sometimes even to the tropics.

11. **Hail.**—Hail falls throughout Australia most frequently along the southern shores of the continent in the winter, and over south-eastern Australia during the summer months. The size of the hailstones generally increases with distance from the coast, a fact which lends strong support to the theory that hail is brought about by ascending currents. Rarely does a summer pass without some station experiencing a fall of stones exceeding in size an ordinary hen-egg, and many riddled sheets of light-gauge galvanised iron bear evidence of the weight and penetrating power of the stones.

Hail storms occur most frequently in Australia when the barometric readings indicate a flat and unstable condition of pressure. They are almost invariably associated with tornadoes or tornadic tendencies, and on the east coast the clouds from which the stones fall are generally of a remarkable sepia-coloured tint.

12. **Barometric Pressures.**—The mean annual barometric pressure (corrected to sea-level and standard gravity) in Australia varies from 29.80 inches on the north coast to 29.92 inches over the central and 30.03 inches in the southern parts of the continent.

In January the mean pressure ranges from 29.70 inches in the northern and central areas to 29.91 inches in the southern. The July mean pressure ranges from 29.90 inches at Darwin to 30.13 at Alice Springs. Barometer readings, corrected to mean sea-level, have, under anticyclonic conditions in the interior of the continent, ranged from 30.81 inches to as low as 28.44 inches. This lowest record was registered at Townsville during a hurricane on the 9th March, 1903. The mean annual fluctuations of barometric pressure for the capitals of Australia are shewn on page 89.

13. **Wind.**—(i.) *Trade Winds.* The two distinctive wind currents in Australia are, as previously stated, the south-east and westerly trade winds. As the belt of the earth's atmosphere in which they blow apparently follows the sun's ecliptic path north and south of the equator, so the area of the continent affected by these winds varies at different seasons of the year. During the summer months the anticyclonic belt travels in very high latitudes, thereby bringing the south-east trade winds as far south as 30° south latitude. The westerly trade winds are forced a considerable distance to the south of Australia, and are very rarely in evidence in the hot months. When the sun passes to the north of the equator, the south-east trade winds follow it, and only operate to the north of the tropics for the greater part of the winter. The westerly winds, by the same force, are brought into lower latitudes during the same period of the year. They sweep across the southern areas of the continent from the Leeuwin to Cape Howe, and during some seasons are remarkably persistent and strong. They occasionally penetrate to almost tropical latitudes, and though usually cold and dusty inland, are of the greatest service to the country, for being rain-bearing winds, moisture is by their agency precipitated over vast areas in the south of the continent.

(ii.) *Land and Sea Breezes.* The prevailing winds second in order of importance are the land and sea breezes. These generally blow at right angles to the coast-line in their early stages, but are deflected to the north and south in the middle and later periods of the blows.

On the east coast the sea breezes which come in from the north-east, when in full force, frequently reach the velocity of a gale during the afternoon in the summer months, the maximum hourly velocity, ordinarily attained about 3 p.m., not unfrequently attaining a rate of 35 to 40 miles per hour. This wind, although strong, is usually shallow in depth, and does not ordinarily penetrate more than 9 or 12 miles inland.

The land breezes on the east coast blow out from a south-westerly direction during the night.

On the western shores of the continent the directions are reversed. The sea breezes come in from the south-west, and the land breezes blow out from the north-east.

(iii.) *Inland Winds.* Inland, the direction of the prevailing winds is largely regulated by the seasonal changes of pressure, so disposed as to cause the winds to radiate spirally outwards from the centre of the continent during the winter months, and to circulate spirally from the seaboard to the centre of Australia during the summer months.

(iv.) *Prevailing Direction at the State Capitals.* In *Perth*, southerly (south-west to south-east) is the prevailing direction for August to April inclusive, and east-north-east to north-north-east for the remaining months.

In *Adelaide* the summer winds are from the south-west and south, and in the winter from north-east to north.

In *Brisbane*, south-east winds are in evidence all the year round, but more especially during the months January, February, March and April.

In *Sydney* from May to September the prevailing direction is westerly, and for the remaining seven months north-easterly.

Melbourne winter winds are from north-west to north-east, and those of the summer from south-west to south-east.

At *Hobart* from April to September the prevailing direction is from north to north-west, and for the other six months from north and south-east.

Over the greater part of Australia January is the most windy month, i.e., is the month when the winds are strongest on the average, though the most violent wind storms occur at other times during the year, the time varying with the latitude.

14. Cyclones and Storms.—(i.) *General.* The "elements" in Australia are ordinarily peaceful, and although severe cyclones have visited various parts, more especially coastal areas, such visitations are rare, and may be properly described as erratic.

During the winter months the southern shores of the continent are subject to cyclonic storms, evolved from the V-shaped depressions of the southern low-pressure belt. They are felt most severely over the south-western parts of Western Australia, to the south-east of South Australia, in Bass Straits, including the coast line of Victoria, and on the west coast of Tasmania. Apparently the more violent wind pressures from these cyclones are experienced in their northern half, that is, in that part of them which has a north-westerly to a south-westerly circulation.

Occasionally the north-east coast of Queensland is visited by hurricanes from the north-east tropics. During the first three months of the year these hurricanes appear to have their origin in the neighbourhood of the South Pacific Islands, their path being a parabolic curve of south-westerly direction. Only a small percentage, however, reach Australia, the majority recurring in their path to the east of New Caledonia.

Anemometrical records for these storms do not exist, but the fact that towns visited by them have been greatly damaged indicates that the velocity must be very great. Fortunately the area covered by these storms is very small when compared with the southern cyclones, and the region affected during an individual visitation is very limited. The heaviest blows are experienced to the west of the vortex with south-east to south-west winds.

(ii.) *Severe Cyclones.* Very severe cyclones, popularly known as "Willy Willies," are peculiar to the north-west coast of Western Australia from the months of December to March inclusive. They apparently originate in the ocean, in the vicinity of Cambridge Gulf, and travel in a south-westerly direction with continually increasing force, displaying their greatest energy near Cossack and Onslow, between latitudes 20° and 22° South. The winds in these storms, like those from the north-east tropics, are very violent and destructive, causing great havoc amongst the pearl-fishers. The greatest velocities are usually to be found in the south-eastern quadrant of the cyclones, with north-east to east winds. After leaving the north-west coast, these storms either travel southwards, following the coast-line, or cross the continent to the Great Australian Bight. When they take the latter course their track is marked by torrential rains, as much as 29.41 inches, for example, being recorded at Whim Creek from one such occurrence. Falls of 10 inches and over have frequently been recorded in the interior of Western Australia from similar storms.

Cyclones occasionally develop from incipient monsoonal low-pressures in the interior of the continent. Their formation is apparently materially assisted by the advancing high-pressures to the west of them, for they seldom or never appear without this accompaniment. The velocity and duration of the resultant gales, too, have a distinct relation to the magnitude of pressure in the anticyclones. Evidence of excess of high pressures on such occasions indicates severe gales in the cyclones, and in the case of moderate pressures, moderate gales.

These cyclones do not attain their severest phases until they reach the seaboard. The most violent winds occur in the south-western quadrant, with south-west to south-east winds. The area affected on the coast-line is not usually very great. During the visitation of one of these storms, about 500 miles in diameter, in July, 1903, a strip of

land, only 80 miles in extent, was affected. But so severe was the gale within this region that steamers of from 8000 to 10,000 tons, leaving Port Jackson, were buffeted and tossed about like corks by the turbulent sea. Notwithstanding this, vessels 200 miles to the east lay becalmed and had no indication of the violent atmospheric upheaval relatively so near.

Though storms of this type may occur at any time of the year, they are more frequent during the months of August and September. The velocity of the wind has on one occasion reached the rate of 120 miles per hour.

(iii.) *Southerly Bursters.* The "Southerly Burster" is a characteristic feature of the eastern part of Australia. It is a cool, or cold, wind peculiar to the coastal districts of New South Wales, south of latitude 30°. In a modified form, however, it also appears in the interior of that State, in Victoria, and the western districts of Queensland.

The "Southerly Bursters" invariably follow periods of hot weather, and are a great relief to the population settled over the favoured areas. They occur in all months from August to May inclusive, but most frequently in November. The preceding winds in the early and late summer months are from a north-westerly, and in the midsummer months from a north-easterly direction. A rise in the barometer always takes place before their advent, but no relation has been established between the time this rise begins and the moment of the arrival of the wind itself, neither is there any apparent connection between the velocity of the wind and the rate of gradient of the barometric rise, notwithstanding that records of nearly fifteen hundred "Bursters," extending over a period of forty years, have been analysed with a view of ascertaining if such a connection could be established. All that can be said is that, should the rise be sharp and rapid, the life of the blow will be short, while a slow and gradual one indicates a long and steady blow from the south, after the initial "Burster" has passed. "Southerly Bursters" are usually first noted on the extreme south coast, and travel northward at a rate of 20 miles an hour. The rate of translation has ordinarily no definite relation to the velocity attained by the wind itself.

"Bursters" frequently occur simultaneously at several places along the seaboard, and occasionally they have been known to progress down the coast from north to south. While they may arrive at any time during the day or night, the interval between sundown and midnight is that in which they ordinarily occur.

This type of storm is usually associated with "V"-shaped depressions, but occasionally a condition of relatively high barometric pressures in Victoria will induce their occurrence. It is most frequent during seasons of sporadic rains, and very rare during good years in the interior. In the summer of 1890, the year of the great Darling River flood, only sixteen visitations occurred, and even these were of a very mild character. The series of good years in the interior of Australia, since 1903, has been remarkable for the small annual number of "southerly bursters."

The greatest number ever experienced in a single summer was sixty-two, the average being thirty-two.

In the months of December and January they are usually short lived, and two may occur within the twenty-four hours. In the early and late summer months the intervening periods of warm weather are longer, and the winds are longer sustained, the energy being supplied from the more pronounced high pressures prevailing at these seasons of the year. The velocity varies from a rate of a few miles an hour to over 80 miles per hour, the maximum puffs occurring about an hour after the arrival of the burster. During recent years there has been a falling-off both in their number and strength, the reason for which is not yet understood, but it is suspected that the gradual extension of the agricultural and pastoral industries to the interior of the country may be one of the causes of the change.

Winds of a like character, and possibly derived from similar atmospheric actions and conditions, are—

In Europe—"The Bora," a sharp, cold north-east wind, which blows from the Croatian and Illyrian Mountains along the coast of Dalmatia from Trieste southward ;

and the "Mistral," a violent northerly wind which blows from France to the Gulf of Lyons.

In North America, the "Northers" of Texas have similar characteristics, and in South America "The Pampero," a cold and strong southerly wind which blows over the Pampas of Argentina, is almost identical with the "Southerly Bursters." The "Tehuantepec" winds that blow on the Pacific side of Central America are also very similar.

All parts of Australia are subject during the summer months to hot, desiccating winds, of two kinds. The most common and general class are associated with low-pressure isobars. The more rare and local hot winds are caused by the heating of descending air on the lee-side of mountains. In Victoria the former class are known as "Brick Fielders," a name originally applied to the "Southerly Bursters" in Sydney, because of the dust they raised from the brickfields to the south of the city. When the goldfields were discovered in Victoria the miners hailing from Sydney gave the name to the dusty winds from the opposite quarter.

The hot winds on the south-eastern littoral are analogous to the "Chinook" winds which blow at the eastern foot of the Rocky Mountains; to the "Föhn" winds of the Alpine Valleys; and to the "North-Westers" of the Canterbury Plains in the Middle Island of New Zealand.

15. **Influences affecting Australian Climate.**—Australian history does not cover a sufficient period, nor is the country sufficiently occupied, to ascertain whether or not the advance of settlement has materially affected the climate as a whole. Local changes therein, however, have taken place, a fact which suggests that settlement and the treatment of the land have a distinct effect on local conditions. For example, the mean temperature of Sydney shews a rise of two-tenths of a degree during the last twenty years, a change probably brought about by the great growth of residential and manufacturing buildings within the city and in the surrounding suburbs during that period. Again, low-lying lands on the north coast of New South Wales, that originally were seldom subject to frosts, have with the denudation of the surrounding hills from forests experienced annual visitations, the probable explanation being that, through the absence of trees, the cold air of the high lands now flows, unchecked and untempered, down the sides of the hills to the valleys and lower lands.

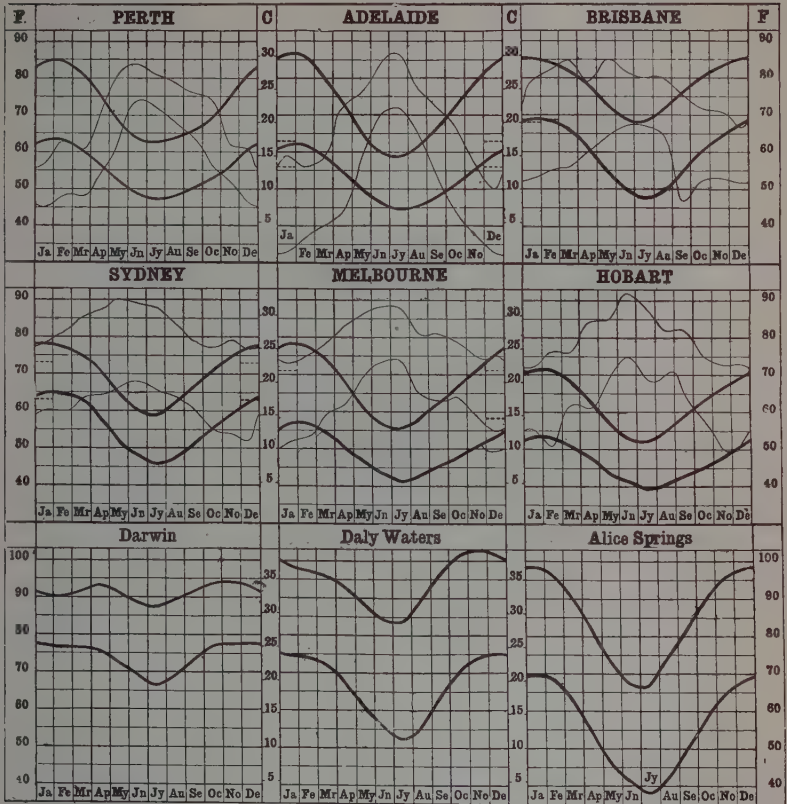
It is pointed out by Abercromby,¹ as shewing the influence of irrigation on climate, that "Before the Suez Canal was made, the desert through which it is cut was said to be rainless; now since the Bitter Lakes have been filled up with water, rain falls on an average eight days in the year at Ismailia." And in the United States, General A. W. Greely² says, concerning "Heat Waves:" "It seems possible that the frequency and intensity of such visitations have diminished on the Pacific coast, since Tennant's record of hot days (classing as such those on which the temperature rose to 80° or above, at San Francisco) indicates that their annual number has very materially diminished since 1859. For seven years prior to 1859 such days averaged thirteen yearly, and since that time, up to 1871, the average yearly number is but four. The immense quantity of land placed under irrigation and the vast increase in vegetation are obvious reasons why there should be some diminution in this respect."

(i.) *Influences of Forests on Climate.* As already indicated, forests doubtless exercise a great influence on local climate, and hence, to the extent that forestal undertakings will allow, the weather can be controlled by human agency. The direct action of forests is an equalising one; thus, especially in equatorial regions and during the warmest portion of the year, they considerably reduce the mean temperature of the air. They also reduce the diurnal extremes of their shade temperatures, by altering the extent of radiating surface, by evaporation, and by checking the movement of air. While decreasing

1. "Seas and Skies," Hon. Ralph Abercromby. 8vo, London, 1888, p. 30.

2. "American Weather," 8vo, London, 1888, p. 253.

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN MAXIMUM AND MINIMUM TEMPERATURE AND HUMIDITY IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



EXPLANATION OF THE GRAPHS OF TEMPERATURE AND HUMIDITY.—In the above graphs, in which the heavy lines denote 'temperature' and the thin lines 'humidity,' the fluctuations of mean temperature and mean humidity are shewn throughout the year. These curves are plotted from the data given in the Climatological Tables hereinafter. The temperatures are shewn in degrees Fahrenheit, the inner columns giving the corresponding values in Centigrade degrees. Humidities have not been obtained for Darwin, Daly Waters, and Alice Springs.

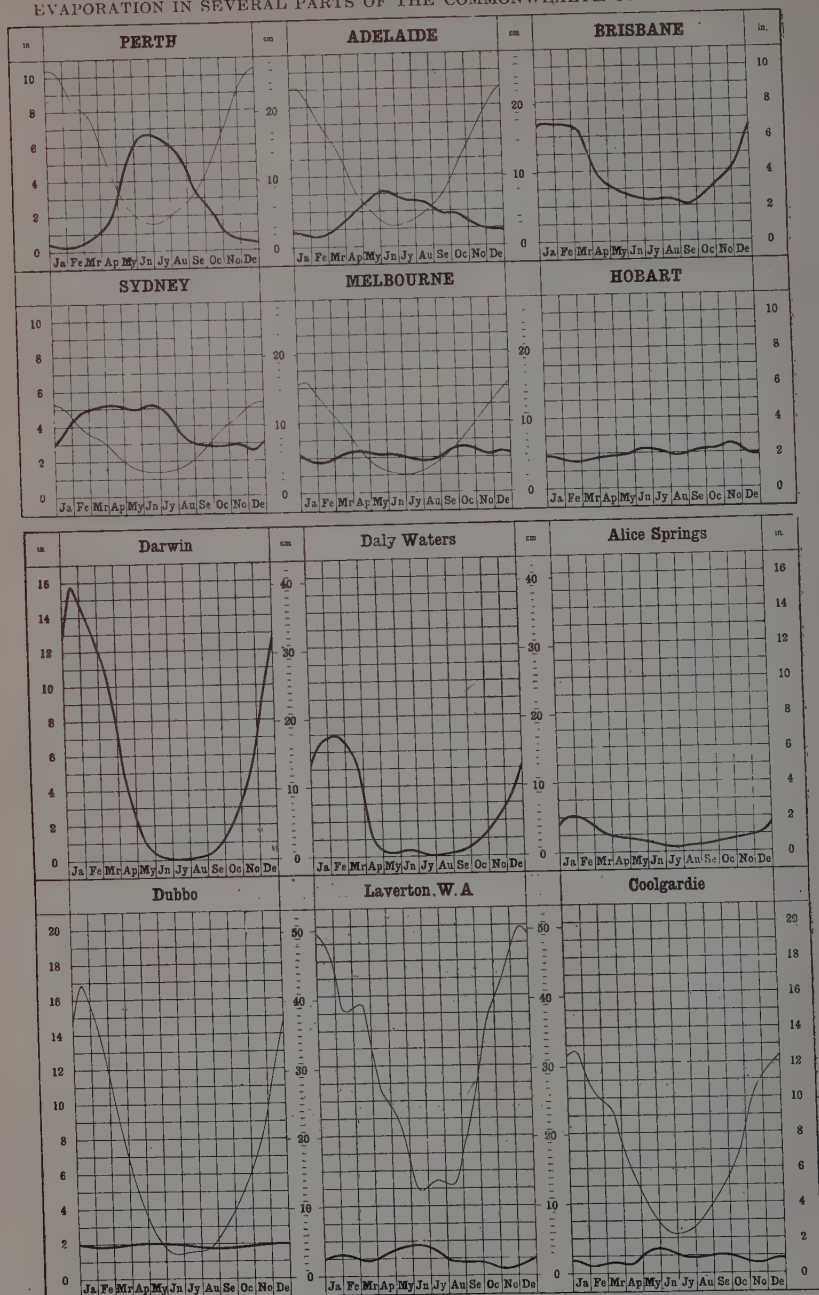
For the thin lines the degree numbers represent relative humidities, or the percentages of actual saturation on the total for the respective temperatures.

The upper temperature line represents the mean of the maximum, and the lower line the mean of the minimum results; thus the curves also shew the progression of the range between maximum and minimum temperatures throughout the year. The humidity curves shew the highest and lowest values of the mean monthly humidity at 9 a.m. recorded during a series of years.

INTERPRETATION OF THE GRAPHS.—The curves denote mean monthly values. Thus, taking, for example, the temperature graphs for Perth, the mean readings of the maximum and minimum temperatures for a number of years on 1st January would give respectively about 83° Fahr. and 62° Fahr. Thus the mean range of temperature on that date is the difference, viz., 21°. Similarly, observations about 1st June would give respectively about 66° Fahr. and 51° Fahr., or a range of 15°.

In a similar manner it will be seen that the greatest mean humidity, say for March, is about 62° and the least mean humidity for the month 48°; in other words, at Perth, the degree of saturation of the atmosphere by aqueous vapour for the month of March ranges between 62 % and 48 %.

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN RAINFALL AND MEAN EVAPORATION IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



(For Explanation see next page.)

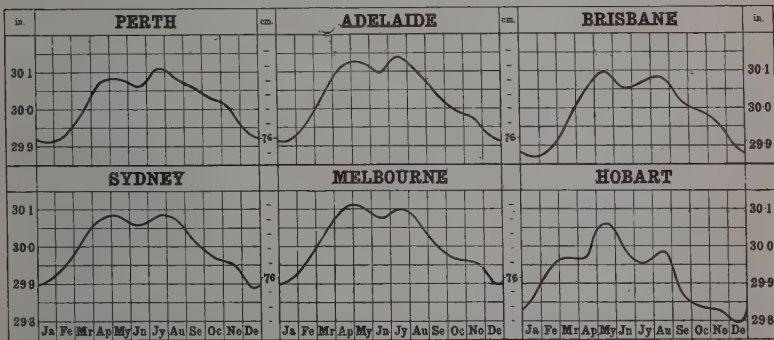
EXPLANATION OF THE GRAPHS OF RAINFALL AND EVAPORATION.—On the preceding graphs thick lines denote rainfall and thin lines evaporation, and shew the fluctuation of the mean rate of fall *per month* throughout the year. The results, plotted from the Climatological Tables hereinafter are shewn in inches (see the outer columns), and the corresponding metric scale (centimetres) is shewn in the two inner columns. The evaporation is not given for Hobart, Darwin, Daly Waters, and Alice Springs.

INTERPRETATION OF THE GRAPHS.—The distance for any date from the zero line to the curve, represents the average number of inches, reckoned as per month, of rainfall at that date. Thus, taking the curves for Adelaide, on the 1st January the rain falls on the average at the rate of about four-fifths of an inch per month, or, say, at the rate of about $9\frac{1}{2}$ inches per year. In the middle of June it falls at the rate of nearly 3 inches per month, or, say, at the rate of about 36 inches per year. At Dubbo the evaporation is at the rate of nearly 17 inches per month about the middle of January, and only about $1\frac{1}{2}$ inches at the middle of June.

TABLE SHEWING MEAN ANNUAL RAINFALL AND EVAPORATION IN INCHES OF THE PLACES SHEWN ON PRECEDING PAGE, AND REPRESENTED BY THE GRAPHS.

	Rainfall.	Evapora- tion.		Rainfall.	Evapora- tion.
Perth ...	33.54	66.01	Port Darwin ...	62.12	—
Adelaide ...	20.62	54.44	Daly Waters ...	27.25	—
Brisbane ...	47.25	48.61	Alice Springs...	11.09	97.10
Sydney ...	47.85	37.42	Dubbo ...	22.39	81.03
Melbourne ...	25.40	38.30	Laverton, W.A.	9.87	—
Hobart ...	23.38	—	Coolgardie ...	9.37	86.60

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN BAROMETRIC PRESSURE FOR THE CAPITALS OF THE COMMONWEALTH OF AUSTRALIA.



EXPLANATION OF THE GRAPHS OF BAROMETRIC PRESSURE.—On the above graphs the lines representing the yearly fluctuation of barometric pressure at the State capital cities are means for long periods, and are plotted from the Climatological Tables given hereinafter. The pressures are shewn in inches on about $2\frac{1}{2}$ times the natural scale, and the corresponding pressures in centimetres are also shewn in the two inner columns, in which each division represents one millimetre.

INTERPRETATION OF THE BAROMETRIC GRAPHS.—Taking the Brisbane graph for purposes of illustration, it will be seen that the mean pressure on 1st January is about 29.87 inches, and there are maxima in the middle of May and August of about 30.10 and 30.08 respectively. The double maxima appear clearly on each graph.

Chart indicating the area affected and period of duration of the Longest Heat Waves when the Maximum Temperature for consecutive 24 hours reached or exceeded 90° Fah.

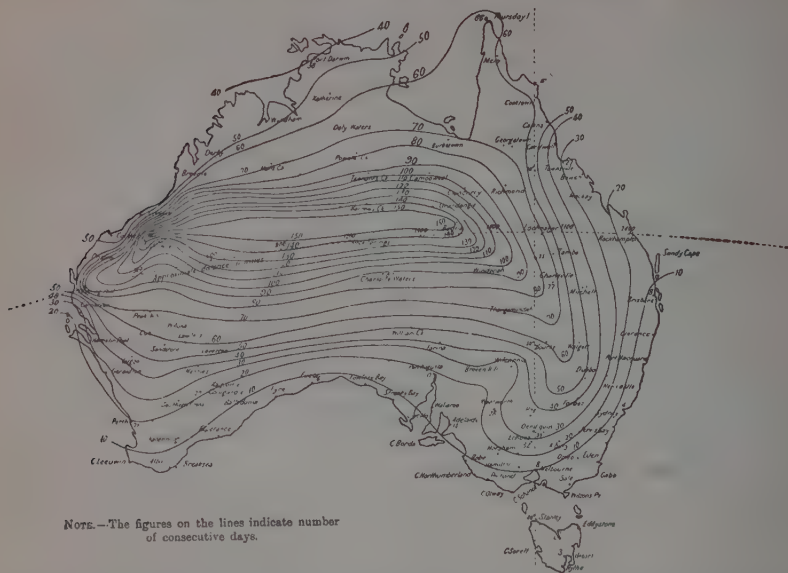
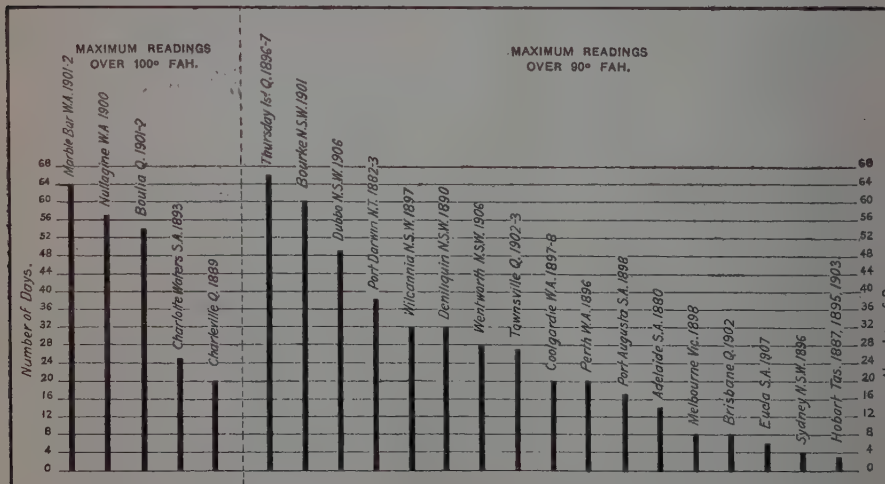
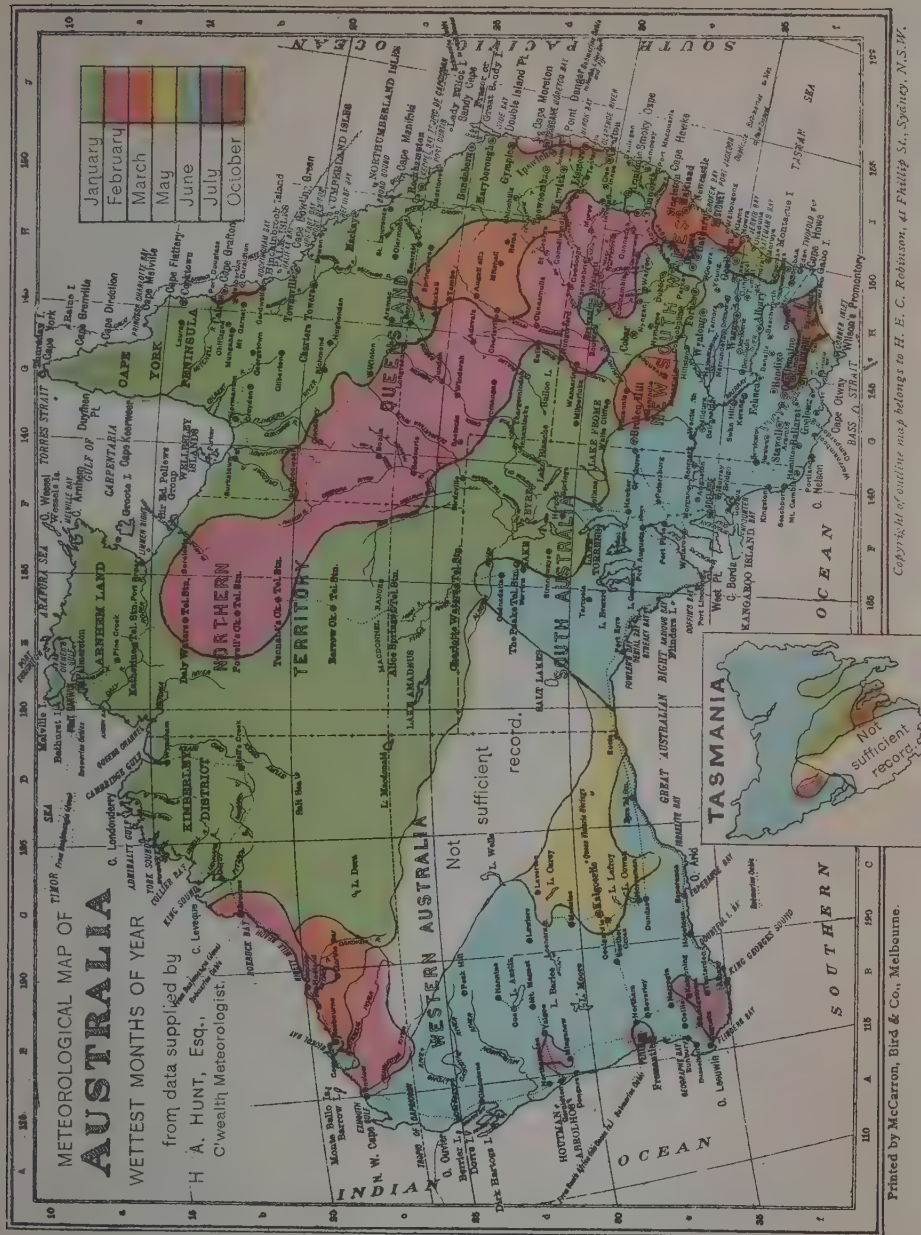


Diagram showing the greatest number of consecutive days on which the Temperature in the shade was over 100° and also over 90° at the places indicated.





METEOROLOGICAL SUB-DIVISIONS.

WEST AUSTRALIA.

1. East Kimberley.
2. West Kimberley.
3. North-West.
4. Gascoyne.
5. South-West.
6. Eucla.
7. Eastern.

SOUTH AUSTRALIA.

8. Northern Territory.
9. Far North and N.W.
10. West.

No.

11. Upper North.
12. North-East.
13. Lower North.
14. Central.
15. Murray Valley.
16. South-East.

QUEENSLAND.

17. Peninsular.
18. Gulf.
19. Far West.
20. Central.
21. Nth-East Coast.

No.

22. Central Coast.
23. South-East Coast.
24. Darling Downs.
25. Maranoa.
26. South-West.

NEW SOUTH WALES.

27. Western.
28. North-West Plain.
29. North-West Slope.
30. Northern Tableland
31. North Coast.
32. Hunter & Manning.

No.

33. Central Tableland.
34. Metropolitan.
35. Cent. Westn. Slope.
36. Cent. Westn. Plain.
37. Riverina.
38. South-West Slope.
39. Southern Tableland
40. South Coast.

VICTORIA.

41. Gippsland.
42. North-East.
43. Central.

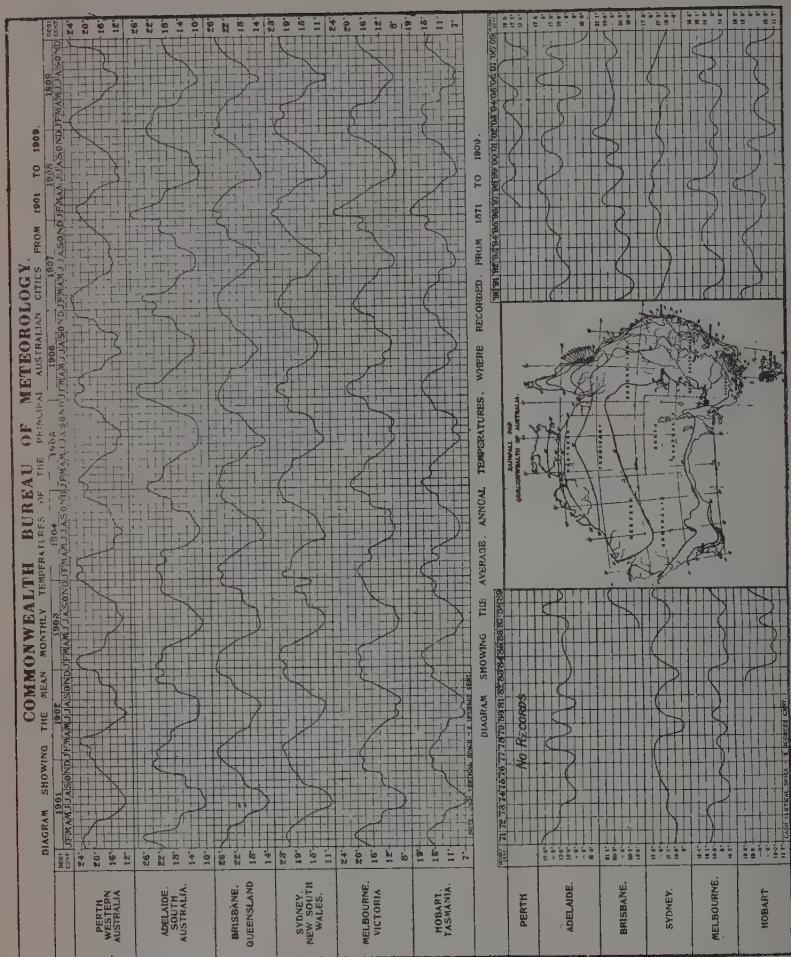
No.

44. North Central.
45. Mallee.
46. Wimmera.
47. Western.

TASMANIA.

48. Northern.
49. W. Coast Mt. Region
50. Central Plateau.
51. Midland.
52. East Coast.
53. Derwent.
54. South-Eastern.

The above are the meteorological sub-divisions adopted by H. A. HUNT, Esq., C'wealth Meteorologist.



EXPLANATION OF GRAPH.

The six continuous curves on the upper part of the diagram show the fluctuations of mean monthly temperatures of the Australian capitals from 1901 to 1909. The base of each small square denotes one month, and the vertical side 2° Centigrade or 3.6° Fahrenheit.

The six curves in lower portion of the diagram similarly show the fluctuations of the mean annual temperatures, from 1871 in the case of Adelaide, Sydney and Melbourne, from 1883, 1887 and 1897 in the case respectively of Hobart, Brisbane and Perth. The base of each rectangle represents one year, and the vertical side 0.3° Centigrade or 0.54° Fahrenheit.

The map shows the areas affected by given amounts of annual rainfall, and is elsewhere given.



evaporation from the ground, they increase the relative humidity. Vegetation greatly diminishes the rate of flow-off of rain, and the washing away of surface soil. Thus, when a region is protected by trees, steadier water supply is ensured, and the rainfall is better conserved. In regions of snowfall the supply of water to rivers is similarly regulated, and without this and the sheltering influence of ravines and "gullies," watercourses supplied mainly by melting snow would be subject to alternate periods of flooding and dryness. This is borne out in the inland rivers. Thus, the River Murray, which has never been known to run dry, derives its steadiness of flow mainly through the causes above indicated.

(ii.) *Direct Influences of Forest on Rainfall.* Whether forests have a direct influence on rainfall is a debatable question, some authorities alleging that precipitation is undoubtedly induced by forests, while others contend the opposite. According to Dr. Hann, observations have been made in India and Germany which support the idea that the destruction of trees has had a most deteriorating effect upon the climate.¹ In the Cordilleras, clouds with rain falling from them can be seen hanging over forests, while over contiguous lands covered with shrubs or used for agriculture the sky is blue and the sun is shining.

In America the influence of forests on the rainfall is still debated, but in Europe authorities contend that forests encourage frequent rainfalls. Hann states that a surface which keeps the air moist and cool, and from which there is as great an evaporation as takes place from extended forests, must have a tendency to increase the amount and frequency of precipitation, as contrasted with an open country which is dry, but over which conditions are otherwise similar.

Obviously the settlement of this very important question is difficult. Observations would have to be taken, with different treatments of the land, over very extended periods. Sufficient evidence exists, however, to establish that, even if the rainfall has not increased, the beneficial effect of forest lands in tempering the effects of the climate is more than sufficient to disclose the importance of their protection and extension. Curtis, in a paper read before the Meteorological Congress in 1893, sets forth important evidence of the ill-effects on orchard and wheat country of the felling of trees for the timber trade.

In Michigan, where half a century ago peach trees flourished and were rarely injured by cold, the crops have now nearly disappeared, owing to the removal by timbermen of the shelter afforded by the forests. In Northern Kansas, too, from the same cause, the growing of peaches has been largely abandoned. Many of the South Californian citrus fruit-growers protect their orchards from the destructive effects of wind by the judicious planting of eucalyptus and other trees.

It is the rapid rate of evaporation (says Dr. Fernow), induced by both hot and cold winds, which injures crops and makes life uncomfortable on the plains. Whether the forest aids in increasing precipitation there may be doubt, but nobody can say that it does not check the winds and the rapid evaporation due to them.

Trees as wind-breaks have been successfully planted in central parts of the United States, and there is no reason why similar experiments should not be successful in many parts of our treeless interior. The belts should be planted at right angles to the direction of the prevailing parching winds, and if not more than half a mile apart will afford shelter to the enclosed areas.²

16. Comparison of Rainfalls and Temperatures.—For the purpose of comparison the following lists of rainfalls and temperatures are given for various important cities throughout the world, for the site of the federal capital, and for the capitals of the Australian States:—

1. "Climatology," p. 194.

2. See A. Woeikof, *Petermann's Mittheilungen*, 1885; and W. M. Fulton and A. N. Salisbury, "Convention of U.S.A. Weather Bureau Officials, 1898."

**COMPARISON OF RAINFALLS AND TEMPERATURES
OF CITIES OF THE WORLD WITH THOSE OF AUSTRALIA.**

Place.	Height above M.S.L.	Annual Rainfall.			Temperature.					
		Average.	Highest.	Lowest.	Mean Summer.	Mean Winter.	Highest on Record.	Lowest on Record.	Average Hottest Month.	Average Coldest Month.
	Ft.	Ins.	Ins.	Ins.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.
Amsterdam ...	6	27.29	40.59	17.60	63.2	36.8	90.0	4.1	64.4	35.4
Auckland ...	125	43.31	63.72	26.32	66.1	52.5	91.0	31.9	67.2	51.8
Athens ...	351	15.48	33.32	4.55	79.2	49.1	106.5	19.6	81.1	47.5
Bergen ...	146	89.10	102.80	73.50	56.8	34.5	88.5	4.8	57.9	33.6
Berlin ...	115	22.95	30.04	14.25	64.7	32.2	98.6	-13.0	66.0	30.0
Berne ...	1,877	36.30	58.23	24.69	62.2	30.1	91.4	-3.6	64.4	28.0
Bombay ...	37	71.15	114.89	33.41	93.5	75.1	100.0	55.9	84.8	74.2
Breslau ...	492	22.00	28.01	16.45	63.9	30.0	100.0	-23.4	65.5	29.3
Brussels ...	328	28.35	41.18	17.73	62.6	36.0	95.5	-4.4	63.7	34.5
Budapest ...	500	25.20	35.28	16.79	68.6	30.2	98.6	-5.1	70.4	28.2
Buenos Ayres ...	72	36.82	80.73	21.53	73.2	51.5	103.1	25.9	74.2	50.5
Calcutta ...	21	61.98	89.32	39.38	94.9	67.1	108.2	44.2	85.4	65.5
Capetown ...	40	25.50	36.72	17.71	68.1	54.7	102.0	34.0	68.8	53.9
Caracas ...	3,420	30.03	47.36	23.70	68.3	65.3	87.8	48.2	69.2	63.7
Chicago ...	823	33.54	45.86	24.52	69.2	25.4	103.0	-23.0	72.4	24.0
Christchurch ...	25	25.45	35.90	13.54	61.1	43.4	95.7	21.3	61.6	42.4
Christiania ...	82	22.52	31.73	16.26	61.0	24.4	95.0	-21.1	62.6	23.9
Colombo ...	40	83.83	139.70	51.60	81.5	79.9	95.8	65.0	82.6	79.1
Constantinople ...	245	28.75	42.74	14.78	74.0	48.5	103.6	13.0	75.7	42.0
Copenhagen ...	46	22.33	28.78	13.94	60.7	32.1	90.5	-13.0	62.2	31.4
Dresden ...	115	26.80	34.49	17.72	62.9	32.4	93.4	-15.3	64.4	31.6
Dublin ...	47	27.66	35.56	16.60	59.4	42.0	87.2	13.3	60.5	41.7
Dunedin ...	370	37.06	53.90	22.15	57.3	43.1	94.0	23.0	57.9	42.0
Durban ...	260	40.79	71.27	27.24	75.6	64.4	110.6	41.1	76.7	63.8
Edinburgh ...	441	25.21	32.05	16.44	55.8	38.8	85.3	16.6	57.2	33.3
Geneva ...	1,328	33.48	46.89	21.14	64.4	46.3	...	...	62.2	32.2
Genoa ...	157	61.29	108.22	28.21	73.8	46.3	94.5	16.7	75.4	45.5
Glasgow ...	184	38.49	56.18	29.05	52.7	41.0	84.9	6.6	58.0	38.4
Greenwich ...	163	24.12	35.54	16.38	61.3	39.3	100.0	4.0	62.7	38.6
Hong Kong ...	110	84.10	119.72	45.83	81.3	60.3	97.0	32.0	81.8	53.1
Johannesburg ...	5,750	31.63	50.00	21.66	65.4	54.4	94.0	22.3	63.2	48.9
Leipzig ...	384	24.69	31.37	17.10	63.1	31.5	97.3	-14.8	64.8	30.6
Lisbon ...	312	29.18	52.79	17.32	69.6	51.3	94.1	32.5	70.2	49.3
London ...	18	24.04	38.20	18.23	61.2	39.3	94.0	9.4	62.8	38.7
Madras ...	92	49.06	88.41	18.45	86.7	76.0	113.0	57.5	87.6	75.3
Madrid ...	2,149	16.23	27.48	9.13	73.0	41.2	107.1	10.5	75.7	39.7
Marseilles ...	246	21.88	43.04	12.28	70.3	45.3	100.4	11.5	72.1	43.3
Moscow ...	525	18.94	29.28	12.07	63.4	14.7	99.5	-44.5	66.1	11.9
Naples ...	489	34.00	56.58	21.75	73.6	48.0	99.1	23.9	75.4	46.8
New York ...	314	42.47	59.68	28.78	72.1	31.7	100.0	-6.0	74.5	30.3
Ottawa ...	294	33.40	44.44	26.36	67.2	14.1	98.5	-33.0	69.7	12.0
Paris ...	165	21.92	29.56	16.44	63.5	37.1	101.1	-14.1	65.8	36.1
Pekin ...	143	24.40	36.00	18.00	77.7	26.6	114.0	-5.0	79.2	23.6
Quebec ...	206	40.46	47.57	32.12	63.5	12.4	95.5	-34.3	66.3	10.1
Rome ...	166	32.57	57.89	12.72	74.3	46.0	104.2	17.2	76.1	44.6
San Francisco ...	155	22.83	38.82	9.31	59.0	51.0	101.0	29.0	61.0	50.0
Shanghai ...	14	44.13	62.52	27.91	77.4	39.4	102.9	10.2	79.7	37.4
Singapore ...	8	91.99	158.68	32.71	81.2	78.6	94.2	63.4	81.5	78.3
Stockholm ...	146	18.31	25.46	11.78	59.7	27.0	91.8	-22.0	62.1	26.7
St. Petersburg ...	16	21.30	29.52	13.75	61.1	17.4	97.0	-38.2	63.7	15.2
Tokio ...	70	59.17	77.10	45.72	73.9	38.9	97.9	15.4	77.7	37.1
Trieste ...	85	42.94	63.14	26.57	73.9	41.3	99.5	14.0	76.3	39.9
Vienna ...	663	24.50	33.90	16.50	65.7	30.4	97.7	-8.0	67.1	28.0
Vladivostok ...	55	19.54	33.60	9.39	63.9	11.0	95.7	-21.8	69.4	6.1
Washington ...	75	49.80	61.33	18.79	74.7	34.5	104.0	-15.0	76.8	32.9
Wellington (N.Z.) ...	110	49.70	67.68	30.02	61.7	48.4	98.0	30.0	62.4	47.5

FEDERAL CAPITAL SITE.

	(2,000 to 2,900)	22.50	41.29	10.45	67.5	41.8	104.0	11.1	68.4	39.7
Canberra (Dist.)										
Queanbeyan ...										

THE STATE CAPITALS.

					*	†				
Perth ...	197	33.26	46.73	20.48	72.9	55.7	107.9	35.3	74.1	55.0
Adelaide ...	140	21.06	30.87	13.43	73.1	52.9	116.3	32.0	74.2	51.5
Brisbane ...	137	47.05	88.26	16.17	76.5	59.5	108.9	36.1	77.1	58.0
Sydney ...	146	47.97	82.81	23.01	70.9	53.9	108.5	35.9	71.6	52.3
Melbourne ...	115	25.60	36.61	15.61	66.5	49.9	111.2	27.0	67.5	48.5
Hobart ...	160	23.57	40.67	13.43	61.4	47.0	105.2	27.7	63.2	45.7

* Mean of the three hottest months. † Mean of the three coldest months.

17. Climatological Tables.—The means, averages, extremes, totals, etc., for a number of climatological elements have been determined from long series of observations at the Australian capitals. These are given in the following tables:—

CLIMATOLOGICAL DATA FOR PERTH, W.A.

LAT. 31° 57' S., LONG. 115° 51' E. HEIGHT ABOVE M.S.L. 197 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mr. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds. 9 a.m. & 3 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	27	14	14	14	14	13	14	15	14
January	29.910	797 27/98	0.72	11,501	S	10.32	1.0	2.6	16.7
February	29.927	650 6/08	0.67	10,052	SSE	8.70	1.2	2.3	14.4
March	29.994	601 17/99	0.56	10,168	SSE	7.64	1.0	3.3	14.3
April	30.072	955 25/00	0.45	8,850	SE	4.82	0.5	4.4	8.9
May	30.080	732 22/10	0.36	8,184	ENE	2.60	2.3	5.4	6.1
June	30.060	861 27/10	0.40	8,310	NNE	1.66	1.9	5.9	4.8
July	30.100	949 19/99	0.40	8,618	NNE	1.64	2.6	5.5	6.5
August	30.087	966 15/03	0.44	8,990	WSW	2.36	1.6	5.2	7.0
September	30.061	884 11/05	0.47	9,030	SW	3.34	1.8	5.2	7.1
October	30.034	686 15/98	0.55	10,137	SSW	5.29	1.1	5.1	8.2
November	29.994	777 18/97	0.61	10,290	S	7.69	0.9	3.9	12.4
December	29.932	672 31/98	0.68	11,253	S	9.97	1.3	3.0	16.6
Year	Totals	—	—	—	—	66.03	17.5	—	123.0
	Averages	30.020	—	0.52	9,615	—	—	4.4	—
	Extremes	—	966 15/8/03	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water mn. 3 ft. below surface.				
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.					
No. of yrs. over which observation extends	15	15	15	15	15	15	14	13	—				
January	84.1	62.9	73.5	107.0	16/97	50.6	25/01	56.4	171.1	4/04	42.4	25/02	—
February	84.9	63.3	74.1	106.8	6/98	47.7	1/02	59.1	169.0	4/99	41.2	1/02	—
March	81.5	60.7	71.1	104.3	6/7/06	45.8	8/03	58.5	161.6	†	36.7	8/03	—
April	75.9	56.8	66.4	99.7	9/10	42.4	2/01	57.3	159.0	11/01	35.0	2/01	—
May	68.4	52.4	60.4	90.4	2/07	39.9	*	50.5	138.8	15/02	31.9	18/99	—
June	63.6	48.9	56.2	77.1	9/09	36.9	14/98	40.2	131.0	5/04	30.2	14/98	—
July	62.5	47.4	55.0	73.8	24/99	36.4	19/06	37.4	131.0	31/98	27.6	21/11	—
August	63.8	48.0	55.9	80.4	30/02	35.3	31/08	45.1	134.1	†	27.9	10/11	—
September	65.8	50.1	58.0	86.4	28/00	39.0	18/00	47.4	144.8	19/02	33.2	15/99	—
October	69.2	52.6	60.9	93.4	17/06	41.2	10/03	52.2	152.6	30/01	33.4	1/10	—
November	74.7	56.0	65.4	100.9	27/01	42.0	1/04	58.9	161.5	17/03	35.5	6/10	—
December	80.5	60.5	70.6	107.9	20/04	48.0	2/10	59.9	168.3	20/04	39.1	2/10	—
Year { Averages	72.9	55.0	64.0	—	—	—	—	—	—	—	—	—	—
Extremes	—	—	—	107.9	35.3	—	—	72.6	171.1	—	27.6	—	—
				20/12/04	31/8/08				4/1/04		21/7/11		

* 17 and 18, 1899. † 1/99 and 1/09. ‡ 29/1898 and 16/1902.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.					Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. of days Dew.
No. of yrs. over which observation extends	15	15	15	36	36	36	36	36	—	15
January ...	53	57	45	0.33	3	2.17 1879	nil *	1.74 28/79	—	2.8
February ...	54	63	48	0.31	2	2.30 1883	nil †	0.90 10/83	—	2.2
March ...	55	61	48	0.73	4	4.50 1896	nil ‡	1.53 17/76	—	3.9
April ...	63	70	54	1.69	7	4.97 1882	0.05 ¶	2.62 30/04	—	8.5
May ...	74	81	63	4.94	14	12.13 1879	0.98 ||	2.80 20/79	—	11.7
June ...	79	84	74	6.58	16	12.11 1890	2.16 1877	2.85 16/00	—	12.1
July ...	78	81	72	6.38	16	10.90 1902	2.42 1876	3.00 4/91	—	11.9
August ...	75	79	68	5.62	17	10.33 1882	0.46 1902	2.79 7/03	—	10.7
September ...	69	76	64	3.31	14	7.72 1903	0.69 1877	1.73 23/09	—	8.7
October ...	64	75	56	2.05	11	7.87 1880	0.49 1892	1.38 15/10	—	5.5
November ...	57	62	52	0.77	6	2.12 1880	nil 1891	1.11 30/03	—	4.5
December ...	52	61	46	0.55	4	3.05 1888	nil 1886	1.72 1/88	—	2.9
Year { Totals ...	—	—	—	33.26	114	—	—	—	—	85.4
{ Averages ...	63	—	—	—	—	—	—	—	—	—
{ Extremes ...	—	84	45	—	—	12.13	nil	3.00	—	—
						5/79		4/7/91		

* 1888, 1894, 1897, and 1911. † 1885, 1891, 1896, and 1903. ‡ 1877, 1884, and 1886. § 1890 and 1894.

‡ January, February, March, November, and December, various years.

CLIMATOLOGICAL DATA FOR ADELAIDE, S.A.

LAT. 34° 56' S., LONG. 138° 35' E. HEIGHT ABOVE M.S.L. 140 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	No. of yrs. over which observation extends	Bar. corrected to 32° F. at Sea Level and Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds (a.m. 3 p.m. & 9 p.m.)	No. of Clear Days.
			Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
		55	34	34	34	34	42	40	44	30
January	...	29.914	758 19/99	0.36	8,189	S W & S	8.96	2.3	3.5	7.5
February	...	29.951	691 22/96	0.31	6,925	S W & S	7.30	2.0	3.4	7.0
March	...	30.039	592 12/85	0.26	6,597	S W to S E	5.77	2.2	4.0	6.7
April	...	30.116	773 10/96	0.23	6,358	S W & S†	3.40	1.6	4.9	3.8
May	...	30.123	760 9/80	0.21	6,275	N E to N	1.98	1.8	5.7	1.6
June	...	30.096	750 12/78	0.27	6,765	N E to N	1.22	2.2	6.2	1.3
July	...	30.133	674 25/82	0.26	6,880	N E to N	1.29	1.5	5.8	1.3
August	...	30.100	773 31/97	0.29	7,300	N E to N†	1.85	2.2	5.7	1.9
September	...	30.042	720 2/87	0.32	7,412	N E & S W	2.82	2.4	5.2	2.6
October	...	29.997	768 28/98	0.36	8,116	S W & N E	4.73	3.5	4.9	3.8
November	...	29.974	677 2/04	0.35	7,774	S W to S	6.57	4.0	4.5	5.5
December	...	29.919	675 12/91	0.36	8,172	W S W to S	8.40	2.8	3.8	6.8
Year { Totals	...	—	—	—	—	—	54.29	28.5	—	49.8
Averages	...	30.034	—	0.30	7,255	S W	—	—	4.8	—
Extremes	...	—	773*	—	—	—	—	—	—	—

* 10/4/96 and 31/8/97.

† With tendency N.E.

‡ With tendency S.W

§ Equal.

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water 3 ft. below surface
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	55	55	55	55	55	55	34	51	38
January	86.6	61.8	74.2	116.3 26/58	45.1 21/84	71.2	180.0 18/82	36.5 14/79	70.8
February	86.0	61.9	73.9	113.6 12/90	46.4 13/05	67.2	170.5 10/00	36.7 24/78	70.9
March	80.8	58.9	69.9	108.0 12/61	44.8 —/57	63.2	174.0 17/83	33.8 27/80	68.2
April	73.3	54.6	64.0	98.0 10/66	39.6 15/59	58.4	155.0 1/83	30.3 27/08	64.0
May	85.3	50.0	57.7	88.3 5/66	36.9 —	51.4	145.2 12/79	25.9 10/91	59.1
June	60.1	46.6	53.4	76.0 23/65	32.5 27/76	43.5	138.8 18/79	24.5 20/79	54.7
July	58.6	44.4	51.5	74.0 11/06	32.0 24/08	42.0	134.5 26/90	23.3 25/11	52.2
August	61.9	45.8	53.8	85.0 31/11	32.3 17/59	52.7	140.0 31/92	23.5 7/88	53.3
September	66.2	47.8	57.0	90.7 23/82	32.7 4/58	58.0	160.5 23/82	26.2 15/08	56.5
October	72.4	51.3	61.9	100.5 30/59	36.0 —/57	64.5	158.8 19/82	28.5 7/96	60.7
November	78.9	55.4	67.1	113.5 21/65	40.8 2/09	72.7	166.9 20/78	31.5 2/09	65.2
December	83.4	58.8	71.1	114.2 14/76	43.0 —	71.2	175.7 7/99	32.5 4/84	68.6
Year { Averages	72.8	53.1	62.9	—	—	—	—	—	62.0
Extremes	—	—	—	116.3 26/1/58	32.0 24/7/08	84.3	180.0 18/1/82	23.3 25/7/11	—

* Taken at Lighthouse at entrance to Port River.

† 26/1895 and 24/1904.

‡ 16/61 and 4/06.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.				Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days of Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.
No. of yrs. over which observation extends	44	44	44	73	73	73	73	73	40
January	36	59	33	0.74	4	4.00 1850	nil	2.30 2/89	—
February	42	56	37	0.60	3	2.87 1858	—	1.81 5/90	—
March	47	58	40	1.07	6	4.60 1878	—	3.50 5/78	—
April	57	72	44	1.87	10	6.78 1853	0.06 1910	3.15 5/60	—
May	69	76	58	2.77	14	7.75 1875	0.20 1891	2.47 5/75	—
June	77	84	70	3.09	16	7.80 1847	0.42 1886	1.45 2/40	—
July	76	87	72	2.66	16	5.38 1865	0.36 1899	1.75 10/65	—
August	71	77	65	2.51	16	6.24 1852	0.76 1911	2.23 19/51	—
September	63	72	54	1.94	14	4.64 1840	0.45 1896	1.42 25/93	—
October	52	67	44	1.75	11	3.83 1870	0.31 1888	2.24 16/08	—
November	44	57	38	1.13	8	3.55 1851	0.04 1885	1.88 26/58	—
December	39	50	33	0.93	6	3.98 1861	nil 1904	1.89 29/40	—
Year { Totals	—	—	—	21.06	124	—	—	—	134
Averages	54	—	—	—	—	7.80	—	—	—
Extremes	—	87	33	—	—	6/47	nil	3.50 5/3/78	—

* 1843, 1849, 1878 and 1906.

† 1843, 1860, etc.

‡ 1859, etc.

§ January, February, March and December, various years.

|| and 25/84.

CLIMATOLOGICAL DATA FOR BRISBANE, QUEENSLAND.

LAT. 27° 28' S., LONG. 153° 2' E. HEIGHT ABOVE M.S.L. 137 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 35° F. Mean Sea Level and Standard Gravity from 9 a.m. & 3 p.m. Read's.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. & 3 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	25	—	—	—	25	2	—	25	—
January	29.869	—	—	—	E	5.66	—	6.2	—
February	29.889	—	—	—	S E	4.26	—	6.2	—
March	29.959	—	—	—	S	4.54	—	6.0	—
April	30.043	—	—	—	S	3.63	—	5.1	—
May	30.035	—	—	—	S	2.80	—	4.9	—
June	30.056	—	—	—	S & W	2.28	—	4.2	—
July	30.064	—	—	—	S & W	2.42	—	3.5	—
August	30.057	—	—	—	S & S W	2.43	—	4.0	—
September	30.027	—	—	—	S	2.52	—	2.9	—
October	29.996	—	—	—	N & NE	4.78	—	5.5	—
November	29.960	—	—	—	NE & E	5.53	—	5.2	—
December	29.888	—	—	—	NE & E	7.11	—	5.6	—
Year { Totals	—	—	—	—	—	48.95	—	—	—
Year { Averages	29.993	—	—	—	S'y to E'y	—	—	5.0	—
Year { Extremes	—	—	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water min. 3 ft. below surface			
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.				
No. of yrs. over which observation extends	25	25	25	25	25	25	25	25	—			
January ...	85.3	68.9	77.1	108.9	14/02	58.8	4/93	50.1	162.7	20/89	49.9	4/93
February ...	84.3	68.5	76.4	101.9	11/04	58.7	*	43.2	165.2	6/02	49.3	9/89
March ...	82.1	66.5	74.3	96.8	16/88	55.6	30/95	41.2	160.0	1/87	46.0	28/02
April ...	78.8	61.5	70.2	95.2	†	48.6	17/00	46.6	150.1	1/08	37.0	17/00
May ...	73.4	55.4	64.4	88.8	18/97	41.3	24/99	47.5	147.0	1/05	29.8	8/97
June ...	69.2	50.5	59.8	81.5	6/06	36.3	29/08	45.2	133.9	6/06	25.4	23/88
July ...	68.2	47.8	58.0	83.4	28/98	36.1	†	47.3	134.4	29/89	23.9	11/90
August ...	71.2	49.9	60.6	87.5	28/07	37.4	6/87	50.1	140.7	30/88	27.1	9/99
September ...	75.6	54.7	65.2	90.2	20/04	40.7	1/96	49.5	155.5	26/03	30.4	1/89
October ...	79.8	59.8	69.8	101.4	18/93	43.3	3/99	53.1	156.5	31/89	34.9	8/89
November ...	82.7	63.9	73.3	105.4	13/98	48.5	2/05	56.9	162.3	7/89	38.8	1/05
December ...	85.4	67.5	76.2	105.9	26/93	57.0	16/90	48.9	159.5	23/89	49.1	3/94
Year { Averages ...	78.0	59.6	68.8	—	—	—	—	—	—	—	—	—
Year { Extremes ...	—	—	—	108.9	36.1	72.8	165.2	23.9	—	—	—	—
				14/1/02	11		6/2/10	11/7/90				

* 10-11/04. † 9/96 and 5/03. ‡ 12/94 and 2/96. || 12/7/94 and 2/7/96.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.					Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. days Dew.
No of yrs. over which observation extends	25	25	25	60	52	60	60	—	—	—
January	65	79	53	6.74	14	27.72	1895	0.61	1882	18.31 21/87
February	69	82	55	6.71	14	40.39	1893	0.77	1904	8.36 16/93
March	72	85	56	6.12	16	34.04	1870	0.58	1868	11.18 14/08
April	72	79	60	3.69	13	15.28	1867	0.04	1897	3.93 20/92
May	74	85	64	2.96	10	13.85	1876	0.00	1846	5.62 9/79
June	74	82	67	2.55	8	14.03	1873	0.02	1895	6.01 9/93
July	73	80	67	2.33	8	8.46	1889	0.00	1841	3.54 +
August	71	80	65	2.37	7	14.67	1879	0.00	*	4.89 12/87
September	65	76	47	2.07	8	5.43	1886	0.10	1907	2.46 2/94
October	61	72	52	2.73	10	9.99	1882	0.14	1900	1.95 2/89
November	59	71	53	3.65	10	10.43	1846	0.00	1842	4.46 16/86
December	61	67	52	5.13	12	13.97	1910	0.35	1865	6.60 28/71
Year {	Totals	—	—	47.05	130	—	—	—	—	—
	Averages	68	—	—	—	—	—	—	—	—
	Extremes	—	85	47	—	—	40.39	0.00	18.31	—
						2/1893	+		21/1/87	

— signifies no record kept.

* 1862, 1859, 1830.

† 5/1946, 7/1841, 8/1852, 1869, 1880, 11/1842

‡ 15/76, 16/89.

CLIMATOLOGICAL DATA FOR SYDNEY, N.S.W.

LAT. 33° 52' S., LONG. 151° 12' E. HEIGHT ABOVE M.S.L. 146 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	No. of yrs. over which observation extends	Bar. corrected to 32° F. M. Sea Level and Standard Gravity from 24 hourly Readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
			Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles. mean.	Prevailing Direction.				
		53	45	45	45	53	32	48	50	48
January	29.901	721 1/71	0.38	8,322	N E	5.08	4.7	5.9	1.8
February	29.943	871 12/69	0.34	7,216	N E	3.96	4.1	6.1	1.1
March	30.020	943 20/70	0.26	6,902	N E	3.35	4.1	5.7	1.7
April	30.073	803 6/82	0.23	6,339	N E	2.44	3.9	5.1	2.5
May	30.082	758 6/98	0.23	6,456	W	1.64	3.2	4.9	3.1
June	30.060	712 7/00	0.30	7,230	W	1.36	2.6	4.8	3.3
July	30.079	930 17/79	0.29	7,355	W	1.41	2.5	4.4	4.1
August	30.076	756 22/72	0.27	7,080	W	1.72	3.4	4.1	4.5
September	30.016	964 6/74	0.31	7,299	W	2.53	4.2	4.4	3.5
October	29.966	926 4/72	0.34	7,983	N E	3.68	5.0	5.0	2.1
November	29.953	720 13/68	0.35	7,806	N E	4.40	5.5	5.6	1.5
December	29.881	938 3/84	0.36	8,213	N E	5.25	5.6	5.4	1.8
Year { Totals	—	—	—	—	—	36.82	48.8	—	31.0
Year { Averages	30.004	—	0.31	7,351	N E	—	—	5.1	—
Year { Extremes	—	964 6/9/74	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water min. 3 ft. below surface.*
	Mean	Mean	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
	53	53	53	53	53	53	52	53	51
No. of yrs. over which observation extends	53	53	53	53	53	53	52	53	51
January ...	78.3	64.9	71.6	108.5 13/96	51.2 14/65	57.3	160.9 13/96	44.2 18/97	71.4
February ...	77.2 64.8	71.0	101.0 19/66	49.3 28/63	51.7 162.1 16/98	43.4 25/91	71.9	—	—
March ...	75.4 63.0	69.2 102.6 3/69	48.8 14/86	53.8 172.3 4/89	42.3 13/93	71.0	—	—	—
April ...	70.9 58.2	64.6 89.0 4/09	44.6 27/64	44.4 144.1 10/77	38.0 13/92	68.4	—	—	—
May ...	65.0 52.0	58.5 83.5 1/59	40.2 22/59	43.3 129.7 1/96	30.9 7/88	64.2	—	—	—
June ...	60.4 48.2	54.4 74.7 24/72	38.1 29/62	36.6 123.0 14/78	28.1 24/11	59.9	—	—	—
July ...	58.9 45.6	52.3 74.9 17/71	35.9 12/90	39.0 144.3 15/99	24.0 4/93	57.3	—	—	—
August ...	62.2 47.5	54.9 82.0 31/84	36.8 3/72	45.2 149.0 30/78	27.7 30/95	57.6	—	—	—
September ...	66.3 51.3	58.9 91.1 24/07	40.8 18/64	50.3 142.2 12/78	30.1 17/05	60.0	—	—	—
October ...	71.0 55.8	63.4 99.7 19/98	43.3 2/99	56.4 149.9 13/96	32.7 9/05	63.3	—	—	—
November ...	74.2 59.6	66.9 102.7 21/78	45.8 1/05	59.5 158.5 23/99	38.8 1/05	66.9	—	—	—
December ...	77.2 62.8	70.0	107.5 31/04	49.3 2/59	58.2 171.5 4/88	69.6	—	—	—
Year { Averages ...	69.8	56.1	63.0	—	—	—	—	—	65.1
Year { Extremes ...	—	—	—	108.5 13/1/96	35.9 12/7/90	72.6	172.3 4/3/89	24.0 4/7/93	—

* Taken at Fort Denison.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.					Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. days Dew
No. of yrs. over which observation extends	53	53	53	53	53	53	53	53	52	52
January ...	70	78	60	3.67	14.3	15.26 1911	0.42 1888	7.08 13/11	0.002	1.3
February ...	73	81	60	4.70	14.2	18.56 1873	0.34 1902	8.90 25/73	0.004	2.0
March ...	75	85	63	5.07	15.3	18.70 1870	0.42 1876	5.66 25/90	0.007	3.3
April ...	77	87	64	5.24	13.2	24.49 1861	0.06 1868	7.52 29/60	0.016	6.0
May ...	77	90	66	4.95	15.4	20.87 1889	0.21 1885	8.36 28/89	0.022	6.6
June ...	79	89	68	5.18	12.9	16.30 1885	0.19 1904	5.17 16/84	0.018	5.5
July ...	77	88	66	4.68	12.3	13.21 1900	0.12 1862	5.72 28/08	0.016	5.4
August ...	74	84	64	3.29	11.6	14.89 1889	0.04 1885	5.33 2/60	0.014	5.0
September ...	70	79	60	2.89	12.2	14.05 1879	0.08 1882	5.69 10/79	0.008	4.0
October ...	68	77	55	2.82	12.7	10.81 1902	0.21 1867	6.37 13/02	0.006	3.0
November ...	68	79	54	2.92	12.5	9.88 1865	0.19 1910	4.23 19/00	0.004	2.3
December ...	68	77	52	2.60	12.8	8.47 1910	0.45 1876	4.75 13/10	0.003	1.6
Year { Totals ...	—	—	—	48.01	159.4	—	—	—	0.120	46.0
Year { Averages ...	73	—	—	—	—	—	—	—	—	—
Year { Extremes ...	—	90	55	—	—	24.49	0.04	8.90	—	—
						4/1861	8/1885	25/2/73		

CLIMATOLOGICAL DATA FOR MELBOURNE, VICTORIA.

LAT. 37° 50' S., LONG. 144° 59' E. HEIGHT ABOVE M.S.L. 115 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. Mm. Sea-level and Standard Gravity from 9 a.m., 3 & 9 p.m. readings	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	54	43	43	43	43	39	—	54	—
January	29.913	583 10/97	0.29	7,345	S W, S E	6.32	—	5.1	—
February	29.960	566 8/68	0.28	6,441	S W, S E	4.98	—	5.1	—
March	30.038	677 9/81	0.22	6,393	S W, S E	3.86	—	5.5	—
April	30.100	597 7/68	0.19	5,719	S W, N W	2.36	—	5.8	—
May	30.104	693 12/65	0.19	5,958	N W, N E	1.46	—	6.5	—
June	30.076	761 13/76	0.24	6,461	N W, N E	1.11	—	6.7	—
July	30.097	755 8/74	0.23	6,462	N W, N E	1.05	—	6.3	—
August	30.067	637 14/75	0.26	6,882	N W, N E	1.47	—	6.3	—
September	30.000	617 11/72	0.29	7,108	N W, S W	2.26	—	6.1	—
October	29.965	899 5/66	0.29	7,377	S W, N W	3.26	—	6.0	—
November	29.952	734 13/66	0.29	7,083	S W, S E	4.50	—	5.8	—
December	29.896	655 1/75	0.30	7,503	S W, S E	5.69	—	5.5	—
Year { Totals	—	—	—	—	—	38.31	—	—	—
Year { Averages	30.014	—	0.26	6,730	S W, N W	—	—	5.9	—
Year { Extremes	—	899 5/10/66	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water mn. 3 ft. below surface.
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	56	56	56	56	56	56	51	51	—
January	73.3	56.7	67.5	111.2 14/62	42.0 28/85	69.2	178.5 14/62	30.2 28/85	—
February	77.8	56.7	67.2	109.5 7/01	40.3 9/65	69.2	167.5 15/70	30.9 6/91	—
March	74.9	54.6	64.7	105.5 2/93	37.1 17/84	68.4	164.5 1/68	28.9 *	—
April	69.5	50.6	59.6	94.0 6/65	34.3 24/88	59.2	152.0 8/61	25.0 23/97	—
May	61.5	46.7	54.1	83.7 7/05	31.3 26/95	52.4	142.6 2/59	23.2 21/97	—
June	56.7	43.9	50.3	72.2 1/07	28.0 11/66	44.2	129.0 11/61	20.4 17/95	—
July	55.4	41.5	48.5	68.4 24/78	27.0 21/69	41.4	125.8 27/80	20.5 12/03	—
August	58.7	43.3	51.0	77.0 20/85	28.3 11/63	48.7	137.4 29/69	21.3 14/02	—
September	62.5	45.4	53.9	82.3 30/07	31.1 16/08	51.2	142.1 20/67	24.7 13/07	—
October	66.9	48.1	57.5	96.1 30/85	32.1 3/71	64.0	154.3 28/68	25.9 3/71	—
November	71.5	51.0	61.3	105.7 27/94	36.5 2/96	69.2	159.6 29/65	24.6 2/96	—
December	75.3	53.7	64.5	110.7 15/76	40.0 4/70	70.7	170.3 20/69	33.2 1/04	—
Year { Averages	67.3	49.4	58.3	—	—	—	—	—	—
Year { Extremes	—	—	—	111.2 14/1/62	27.0 21/7/69	84.2	178.5 14/1/62	20.4 17/6/95	—

* 17/1884 and 20/1897.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.				Dew.	
	Mean 3 a.p.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.
No. of yrs. over which observation extends	54	54	54	56	56	56	56	53	—
January	64	73	53	1.87	7	5.88 1904	0.04 1878	2.97 9/97	—
February	65	75	53	1.76	7	6.24 1904	0.03 1870	2.14 7/04	—
March	67	78	59	2.21	8	7.50 1911	0.18 1859	3.05 15/78	—
April	72	83	62	2.32	11	6.71 1901	0.33 1908	2.28 22/01	—
May	79	86	69	2.16	13	4.31 1862	0.45 1901	1.85 7/91	—
June	80	88	73	2.13	14	4.51 1859	0.73 1877	1.74 21/04	—
July	80	88	74	1.85	13	7.02 1891	0.57 1902	2.71 12/81	—
August	75	81	65	1.81	14	3.59 1909	0.43 1903	1.87 17/81	—
September	72	81	63	2.35	14	5.87 1870	0.52 1907	2.62 12/80	—
October	70	79	68	2.67	13	7.61 1869	0.57 1895	3.00 17/69	—
November	66	75	53	2.19	10	5.05 1881	0.25 1895	2.57 16/76	—
December	64	75	49	2.28	9	7.18 1863	0.11 1904	2.62 28/07	—
Year { Totals	—	—	—	25.60	133	—	—	—	—
Year { Averages	71	—	—	—	—	—	—	—	—
Year { Extremes	—	88	49	—	—	7.61 10/69	0.03 2/70	3.05 15/3/78	—

— signifies no record kept.

CLIMATOLOGICAL DATA FOR HOBART, TASMANIA.

LAT. 42° 58' S., LONG. 147° 20' E. HEIGHT ABOVE M.S.L. 160 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar corrected to 59° F. Mean Sea level and 9 a.m. Readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	18	—	—	—	S	2	—	18	—
January ...	29.857	—	—	—	S E	5.45	—	5.9	—
February ...	29.939	—	—	—	S E & N	4.06	—	5.9	—
March ...	29.967	—	—	—	N & S E	2.87	—	6.0	—
April ...	29.971	—	—	—	N N to N W	2.47	—	6.0	—
May ...	30.062	—	—	—	N N to N W	1.32	—	6.1	—
June ...	29.987	—	—	—	N N to N W	0.77	—	6.2	—
July ...	29.953	—	—	—	N N to N W	0.78	—	5.3	—
August ...	29.985	—	—	—	N N to N W	1.28	—	5.7	—
September ...	29.877	—	—	—	N to N W	1.73	—	6.3	—
October ...	29.840	—	—	—	N	1.97	—	6.3	—
November ...	29.829	—	—	—	N & S E	3.02	—	6.2	—
December ...	29.792	—	—	—	N W & S E	3.14	—	5.7	—
Year { Totals ...	—	—	—	—	—	28.86	—	—	—
Averages ...	29.919	—	—	—	N	—	—	6.0	—
Extremes ...	—	—	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.		Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water 3 ft. below surface
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.	Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	26	28	28	28	28	26	24a	—
January ...	70.8	53.1	62.0	105.0	1/00	64.7	160.0	30.6
February ...	71.2	53.1	62.2	104.4	12/99	65.4	165.0	24/98
March ...	68.0	50.7	59.4	97.5	7/91	36.0	31/05	61.5
April ...	69.9	47.8	55.4	82.4	6/88	33.3	24/88	49.1
May ...	57.6	43.6	50.6	75.3	3/88	29.2	20/02	46.1
June ...	52.8	41.4	47.1	69.2	1/07	29.5	26/02	39.7
July ...	52.0	39.4	45.7	65.4	15/98	27.7	11/95	37.7
August ...	55.1	41.1	48.1	71.5	17/02	30.5	4/97	41.0
September ...	58.5	43.0	50.8	79.5	*	81.0	16/97	48.5
October ...	62.6	45.3	54.0	86.0	29/07	82.0	12/59	54.0
November ...	66.4	48.2	57.3	98.0	23/88	37.0	†	61.0
December ...	68.9	50.8	59.9	105.2	30/97	67.2	156.0	18/05
Year { Averages ...	62.2	46.5	54.4	—	—	—	—	—
Extremes ...	—	—	—	105.2	27.7	77.5	165.0	18.7
				30/12/97	11/7/95		24/2/96	16/7/86

* 30/91 and 17/97. † 24/84, 13/87, 11/85, and 7/00. ‡ 5/86 and 13/05. § 1886 and 1899.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.				Rainfall.				Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days of Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. of days Dew
No. of yrs. over which observation extends	18	18	18	69	54	69	69	29	—	—
January ...	63	72	55	1.82	9	5.91	1893	0.03	1841	2.59
February ...	63	76	51	1.47	8	9.15	1854	0.07	1847	1.80
March ...	68	76	62	1.64	9	7.60	1854	0.02	1843	2.06
April ...	73	84	61	1.81	10	6.50	1909	0.07	1904	5.02
May ...	76	85	68	1.92	12	6.37	1905	0.10	1843	1.62
June ...	81	92	75	2.21	13	8.15	1889	0.22	1852	4.11
July ...	86	97	69	2.11	13	5.98	1849	0.30	1850	1.56
August ...	78	82	70	1.83	13	10.16	1858	0.33	1854	2.28
September ...	73	82	65	2.11	14	7.14	1844	0.39	1847	1.57
October ...	67	75	58	2.22	14	6.67	1906	0.26	1850	2.53
November ...	62	73	50	2.51	12	8.92	1849	0.16	1868	3.70
December ...	59	73	51	1.92	11	9.00	1875	0.11	1842	2.27
Year { Totals ...	—	—	—	23.57	—	—	—	—	—	—
Averages ...	70	—	—	—	138	—	—	—	—	—
Extremes ...	—	92	50	—	—	10.16	0.02	5.02	—	—
						8/1858	3/1843	20/4/09		

— signifies no record kept.

SECTION IV.

POPULATION.

§ 1. Census of 3rd April, 1911.

1. **Numbers Enumerated.**—As the estimates of population depend on the Census, the latest Census, viz., that of the 3rd April, 1911, is first referred to. The Census for the whole of the Australian Commonwealth was taken as for the night between the 2nd and the 3rd of April, 1911, and was the first Census under the provisions of the Commonwealth Census and Statistics Act 1905, which provides for the enumeration of the whole of Australia being dealt with from one centre instead of each State being responsible for its own count as on previous occasions. The numbers recorded in the several States and Territories of the Commonwealth were as follows:—

POPULATION OF THE COMMONWEALTH, 3rd APRIL, 1911.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

States and Territories.	Males.	Females.	Persons.
States—			
New South Wales	857,698	789,036	1,646,734
Victoria	655,591	659,960	1,315,551
Queensland	329,506	276,307	605,813
South Australia	207,358	201,200	408,558
Western Australia	161,565	120,549	282,114
Tasmania	97,591	93,620	191,211
Territories—			
Northern Territory	2,734	576	3,310
Federal Capital Territory	992	722	1,714
Total Commonwealth	2,313,035	2,141,970	4,455,005

2. **Growth during Last Three Decennia.**—The total increase of population of the Commonwealth between the Census of 31st March, 1901, and that of 3rd April, 1911, was 681,204, of which 335,107 were males and 346,097 were females, as compared with a total increase of 599,409, comprising 273,889 males and 325,520 females, for the preceding ten years. The population of each sex enumerated at the Censuses of 3rd April, 1881, 5th April, 1891, 31st March, 1901, and 3rd April, 1911, was as follows:—

POPULATION OF COMMONWEALTH AT LAST FOUR CENSUSES.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

Date of Census.	Males.	Females.	Persons.	(a) Masculinity.
3rd April, 1881	1,214,913	1,035,281	2,250,194	117.35
5th April, 1891	1,704,039	1,470,353	3,174,392	115.89
31st March, 1901	1,977,928	1,795,873	3,773,801	110.14
3rd April, 1911	2,313,035	2,141,970	4,455,005	107.99

(a) Number of males per 100 females.

The increases in the populations of the several States during the past three decennia have been as follow :—

DECENNIAL INCREASES IN THE TOTAL POPULATION.

State.	1881-1891.		1891-1901.		1901-1911.	
	Numerical.	Per cent.	Numerical.	Per cent.	Numerical.	Per cent.
N.S. Wales (a) ...	374,129	49.90	230,892	20.54	293,602	21.67
Victoria ...	278,274	32.30	61,230	5.37	114,481	9.53
Queensland ...	180,193	84.39	104,411	26.52	107,684	21.62
South Australia ...	39,119	14.15	42,813	13.57	50,212	14.01
West. Australia ...	20,074	67.57	134,342	269.86	97,990	53.22
Tasmania ...	30,962	26.76	25,808	17.60	18,786	10.86
N. Territory ...	1,447	41.93	(b)— 87	(b)—1.78	(b)—1,501	(b)—31.20
Commonwealth ...	924,198	41.07	599,409	18.88	681,204	18.05

(a) Including Federal Capital Territory. (b) Decrease.

For the Commonwealth as a whole the increase in population during the decennium 1901-11 was greater by 81,795 than that for the decennium 1891-1901. The rate of increase per cent. was, however, not so great, being 18.05 per cent. for 1901-11, as against 18.88 for 1891-1901. The former corresponds to an increase of 1.67 per cent. per annum, the latter to an increase of 1.74 per cent. per annum.

As regards the separate States, the numerical increases in the case of New South Wales, Victoria, Queensland and South Australia were greater for 1901-11 than for 1891-1901. On the other hand, Western Australia and Tasmania experienced greater numerical increases in the earlier than in the later decennium, while the Northern Territory, which exhibited an actual loss of population in both decennia, experienced a much heavier loss in 1901-11 than in 1891-1901. In the matter of rates of increase per cent. New South Wales, Victoria and South Australia were higher in 1901-11 than in 1891-1901, while Queensland, Western Australia and Tasmania were lower, and the rate of decrease in the Northern Territory was much heavier.

§ 2. Special Characteristics of Commonwealth Population.

1. **Sex Distribution.**—In respect of the relative proportions of the sexes in its population, Australia has, since the first settlement of the continent in 1788, differed materially from the older countries of the world. In the latter, the populations have, in general, grown by natural increase, and their composition usually reflects that fact, the numbers of males and females being in most countries approximately equal, with a more or less marked tendency, however, for the females to slightly exceed the males. The excess of females arises from a variety of causes, amongst which may be mentioned—(a) higher rate of mortality amongst males; (b) greater propensity on the part of males to travel; (c) the effects of war; (d) employment of males in the army, navy, and mercantile marine; (e) preponderance of males amongst emigrants. On the other hand, the last-mentioned cause has tended naturally to produce an excess of males in Australia, since the majority of those emigrating to Australia have been males. The circumstances under which the colonisation of Australia was first undertaken, and the remoteness of this country from Europe, have combined to accentuate this feature.

There is little doubt that the continent presented few attractions to the explorers who visited its shores, mainly on the west and north, during the sixteenth, seventeenth, and early part of the eighteenth centuries, and it was only when the Declaration of Independence of the United States, in 1776, closed to the British prison authorities the North American plantations, which had previously been used as receptacles for the deportation of convicts, that the overcrowding of the gaols caused them to consider the advisability of converting the great southern continent into a convict settlement. This idea was put into practice in 1787, when the first consignment left England, arriving in Sydney Cove on the 26th January, 1788. Reports concerning the number of persons actually landed are conflicting, but it appears that the total may be set down approximately at 1035, including the military. Details as to the sexes are not available, but the males must have largely preponderated. Indeed, nearly nine years later, on the 31st December, 1796, in a total population of 4100, there were 257 males to every 100 females.

The subsequent progress of Australia resulting from extensive mineral discoveries and the development of its great natural resources, pastoral, agricultural, forestal, etc., have tended to attract male rather than female immigrants, particularly in view of the distance from the principal centres of European population. Even at the Census of 3rd April, 1911, after more than 123 years of settlement, there were 108 males to each 100 females, and this notwithstanding the equalising tendency due to additions to the population by means of births and to deductions therefrom by the deaths of immigrants.

The terms "masculinity" and "femininity" have been used to express the proportion of the sexes in any group, the former indicating the ratio of males to females, the latter the reciprocal of this, viz., the ratio of females to males. The term "masculinity" is that which has been adopted by the Commonwealth Bureau of Census and Statistics, and the masculinity of any group is usually expressed numerically as the number of males to each 100 females. The masculinity of the population of the Commonwealth at intervals of five years from 1800 to 1911 is as follows:—

MASCULINITY OF THE COMMONWEALTH POPULATION, 1800 to 1911.

Year.	Number of Males to each 100 Females.	Year.	Number of Males to each 100 Females.	Year.	Number of Males to each 100 Females.
1800	263.05	1840	201.75	1880	117.28
1805	233.35	1845	163.38	1885	118.33
1810	190.53	1850	143.20	1890	116.06
1815	188.84	1855	145.48	1895	113.41
1820	243.71	1860	140.15	1900	110.55
1825	329.77	1865	125.38	1905	108.65
1830	308.80	1870	121.10	1910	107.87
1835	260.71	1875	118.25	1911	108.54

The curious inequalities of the increases in the number of males and in the number of females for the Commonwealth as a whole, and for the individual States respectively, will be seen by referring to the graphs on pages 176 and 177.

The significance of the rates of masculinity shewn in the above table will perhaps be better understood by a comparison with the corresponding information for other countries. This has been made in the next table, which shews, for some of the principal countries of the world for which such particulars are available, the masculinity of the population according to the most recent statistics:—

MASCULINITY OF THE POPULATION OF VARIOUS COUNTRIES.

Country.	Year.	No. of Males to each 100 Females.	Country.	Year.	No. of Males to each 100 Females.
New Zealand...	1911	111.61	Belgium ...	1900	98.70
Australia ...	1911	108.54	Netherlands ...	1910	98.10
Servia ...	1910	106.77	Prussia ...	1910	97.70
India (Feudatory States)	1901	106.02	German Empire ...	1910	97.44
Canada ...	1901	105.04	Russia (European) ...	1897	97.18
United States of America	1900	104.87	France ...	1906	96.73
British India ...	1911	104.59	Austria ...	1900	96.65
Bulgaria ...	1910	103.58	Switzerland ...	1900	96.36
Rumania ...	1899	103.30	Sweden ...	1910	95.61
Japan ...	1911	102.16	Spain ...	1900	95.36
Poland (Russian) ...	1897	101.42	Denmark ...	1911	94.27
Greece ...	1907	101.37	Scotland ...	1911	94.12
Ireland ...	1911	99.62	England and Wales ...	1911	93.67
Hungary ...	1900	99.07	Norway ...	1910	93.51
Italy ...	1901	98.99	Portugal ...	1900	91.53

2. **Age Distribution.**—The causes which operated to bring about an excess of males in the population of the Commonwealth have been equally effective in rendering the age distribution essentially different from that of older countries. The majority of the immigrants, whether male or female, were in the prime of life, and as the Australian birth-rate in earlier years was a comparatively high one, the effect produced is a population in which the proportion of middle-aged persons is somewhat above, and the proportion for young as well as for advanced ages somewhat below the normal.

Thus in the Commonwealth at the Census of 3rd April, 1911, the age distribution of the population was as shewn in the table hereunder; that for England and Wales for the Census of 1901, the latest available, is given also for the sake of comparison :—

AGE DISTRIBUTION OF POPULATION.

COMMONWEALTH, AND ENGLAND AND WALES.

Age Group.	Population of COMMONWEALTH, 3rd April, 1911.	Percentage on Total Population.	Population of ENGLAND and WALES, 31st March, 1901.	Percentage on Total Population.
Under 15' ...	1,409,823	31.65	10,545,739	32.42
15 and under 65 ...	2,854,753	64.08	20,464,351	62.91
65 and upwards ...	190,429	4.27	1,517,753	4.67
Total ...	4,455,005	100.00	32,527,843	100.00

During the past 50 years, the age distribution of the Australian population has varied considerably, as will be seen from the following table, which gives for each sex the proportion per cent. of the total population in the age groups "under 15," "15 and under 65," and "65 and over." The figures upon which these percentages have been computed are those furnished by the Censuses of the several States and the Commonwealth Census of 1911. Those for 1861 include the results of the Western Australian Census of 1859, while those for 1871 include the results of the Western Australian and Tasmanian Censuses of 1870 :—

AGE DISTRIBUTION OF COMMONWEALTH POPULATION, 1861 to 1911.

Census Year.	Males.				Females.				Persons.			
	Under 15 Years.	15 and under 65.	65 and over.	Total	Under 15 Years.	15 and under 65.	65 and over.	Total	Under 15 Years.	15 and under 65.	65 and over.	Total
	%	%	%	%	%	%	%	%	%	%	%	%
1861	31.41	67.42	1.17	100	43.03	56.20	0.77	100	36.23	62.72	1.00	100
1871	38.84	59.11	2.05	100	46.02	52.60	1.38	100	42.09	56.17	1.74	100
1881	36.37	60.85	2.78	100	41.89	56.07	2.04	100	38.91	58.65	2.44	100
1891	34.77	62.02	3.21	100	39.36	58.08	2.56	100	36.90	60.20	2.90	100
1901	33.87	61.82	4.31	100	36.50	59.85	3.65	100	35.12	60.88	4.00	100
1911	30.84	64.82	4.34	100	32.52	63.28	4.20	100	31.65	64.08	4.27	100

The excess of males over females, previously referred to, is found mainly in ages of 21 and upwards. In the total population under the age of 21 there were, at the date of the last Census, less than 103 males to each 100 females, while in that aged 21 and upwards there were more than 112 males to each 100 females. In the absence of a large immigration of males in excess of females, therefore, the disparity between the sexes in Australia would soon be eliminated.

3. *Race and Nationality.*—(i.) *Constitution of Australia's Population.* As regards race, the population of the Commonwealth may be conveniently divided into two main groups, one comprising the aboriginal natives of Australia, and the other the various immigrant races which, since the foundation of settlement in 1788, have made the Commonwealth their home. Under the head of "immigrant races" would, of course, be included not only those residents of Australia who had been born in other countries, but also their descendants born in Australia.

(a) *The Aborigines.* It would appear that the aboriginal population of Australia was never large, and that the life led by them was, in many parts of the country, a most precarious one. With the continued advance of settlement the numbers have shrunk to such an extent that in the more densely populated States they are practically negligible. Thus, at the Census of 1911 the number of full-blooded aborigines who were employed by whites or were living in proximity to settlements of whites was stated to be only 19,939. In some of the States, however, more particularly in Queensland, South Australia, Western Australia, and the Northern Territory, there are, in addition, considerable numbers of natives still in the "savage" state, numerical information concerning whom is of a most unreliable nature, and can be regarded as little more than the result of mere guessing.

Ethnologically interesting as is this remarkable and rapidly-disappearing race, practically all that has been done to increase our knowledge of them, their laws, habits, customs, and languages, has been the result of more or less spasmodic and intermittent effort on the part of enthusiasts either in private life or the public service. An enumeration of them has never been seriously undertaken in connection with any Australian Census, though a record of the numbers who were in the employ of whites, or living in contiguity to the settlements of whites, has on the occasion of the recent Censuses usually been made. As stated above, various guesses at the number of aboriginal natives at present in Australia have been made, and the general opinion appears to have prevailed that 150,000 might be taken as a rough approximation to the total. More recent estimates, however, have given results considerably below this total. Thus, in his report of June, 1910, the Queensland Chief Protector of Aborigines estimates the total at 74,753, distributed as follows:—New South Wales, 6897; Victoria, 256; Queensland, 20,000; South Australia (including the Northern Territory), 20,600; Western Australia, 27,000. A somewhat similar estimate

made at an earlier date by Dr. Roth, formerly Chief Protector of Aborigines in Queensland, gave Queensland at least 18,000; Western Australia at least 24,000, and the Northern Territory from 20,000 to 22,000. In view of these figures it would appear that the number of aboriginal natives in Australia may be said to be not more than 100,000. The whole matter, however, is involved in considerable doubt.

The number of aboriginal natives enumerated in the several States and Territories of the Commonwealth at the Census of 1911 was as shewn hereunder, the figures given relating as before stated only to those in a civilised or semi-civilised condition.

ABORIGINAL NATIVES ENUMERATED AT CENSUS OF 1911.

Persons, etc	N.S.W.	Victoria.	Queens- land.	South Australia.	Western Australia.	Tas- mania.	Northern Territory.	Federal Capital Territy	C'wlth.
Males ...	1,152	103	5,145	802	3,433	2	743	5	11,385
Females ...	860	93	3,542	637	2,936	1	480	5	8,554
Total	2,012	196	8,687	1,439	6,369	3	1,223	10	19,939
Masculinity (a)	138.9	110.8	145.3	125.9	116.9	200.0	154.9	100.0	133.1

(a) Number of males per hundred females.

These figures, as noted above, refer only to those natives who were, at the date of the Census, in the employ of whites or were living in contiguity to the settlements of whites.

In the Commonwealth Constitution Act provision is made for aboriginal natives to be excluded for all purposes for which statistics of population are made use of under the Act, but the opinion has been given by the Commonwealth Attorney-General that, "in reckoning the population of the Commonwealth, half-castes are not aboriginal natives within the meaning of section 127 of the Commonwealth of Australia Constitution Act, and should therefore be included." It may be added, however, that as "half-castes," living in the nomadic state, are practically undistinguishable from aborigines, it has not always been found practicable to make the distinction, and further, that no authoritative definition of "half-caste" has yet been given.¹

(b) *Immigrant Races.* As regards the immigrant races, it may be said that they consist mainly of natives of the three divisions of the United Kingdom and their descendants. The proportion of Australian-born contained in the population of the Commonwealth has, in recent years, increased rapidly, and at the Census of 3rd April, 1911, out of a total population of 4,424,537 persons whose birthplaces were specified, no fewer than 3,667,672, or 82.90 per cent., were Australian born, while of the remainder, 591,729, or 13.37 per cent., were natives of the United Kingdom, and 31,868, or 0.72 per cent., were natives of New Zealand, that is, 96.99 per cent. of the total population at the date of the Census had been born in either Australasia or the United Kingdom. The other birthplaces most largely represented in the Commonwealth were Germany, 32,990 (0.75 per cent.); China, 20,775 (0.47 per cent.); Scandinavia (comprising Sweden, Norway and Denmark), 14,706 (0.33 per cent.); Polynesia, 3410 (0.08 per cent.); British India, 6644 (0.15 per cent.); United States of America, 6642 (0.15 per cent.); and Italy, 6719 (0.15 per cent.). The total population of Asiatic birth was 36,442 (0.82 per cent.), of whom 3474 were born in Japan.

1. An article on the Aborigines of Australia, specially written for the Year Book by W. Ramsay Smith, D.Sc., M.B., C.M., F.R.S.E., Permanent Head of the Department of Public Health of South Australia, will be found in Section IV., § 12, page 158, Year Book No. 3.

(c) *Non-European Races.* The Census taken on the 3rd April, 1911, was the first occasion on which a systematic attempt had been made to ascertain the number of persons of non-European races in Australia. On former occasions the inquiry did not usually extend further than a request that in all cases in which the person enumerated was an Aboriginal or a Chinese, whether of the full-blood or of the half-blood, the fact should be specially noted in the column on the Census schedule relating to birthplace. At the recent Census the inquiry as to race was made one of the leading items, and all persons of non-European race were required to have their race specified. From the figures so obtained the following table has been compiled:—

PERSONS OF NON-EUROPEAN RACE IN THE COMMONWEALTH, 3rd APRIL, 1911.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

States and Territories.	Aust- ralian	Asiatic.		African.		American.		Polynesian.		Indefinite.		Total.	
	Half- caste Aborigi- nals	Full- blood.	Half- caste	Full- blood	Half- caste	Full- blood	Half- caste	Full- blood	Half- caste	Full- blood	Half- caste	Full- blood.	Half- caste
States—													
N. S. Wales ...	4,512	10,983	1,390	169	166	10	7	343	70	2	...	11,507	6,145
Victoria ...	447	5,972	1,056	58	63	6	9	12	5	1	2	6,049	1,582
Queensland ...	2,508	9,123	940	53	65	37	5	2,123	142	...	...	11,336	3,660
S. Australia ...	692	1,049	175	18	21	5	1	5	4	2	...	1,079	893
W. Australia ...	1,475	5,578	129	48	15	7	2	25	3	...	...	5,658	1,624
Tasmania ...	227	532	127	4	6	...	...	5	2	...	...	541	362
Territories—													
N. Territory ...	244	1,594	35	7	...	...	...	11	1	...	...	1,612	280
Fed. Cap. Ter.	8	7	...	...	...	...	...	...	...	...	...	7	8
Total ...	10,113	34,838	3,852	357	336	65	24	2,524	227	5	2	37,789	14,554

The proportion of population of Non-European race (exclusive of full-blooded aborigines) in each State is shewn in the following table, full-blood and half-caste non-Europeans being shewn separately:—

PROPORTION OF NON-EUROPEAN RACES IN THE COMMONWEALTH, 3rd APRIL, 1911.

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS.)

States and Territories.	Total Population.	Non-European Races.					
		Full-blood.		Half-caste.		Total.	
		Number.	Number per 1000 of Total Populat'n.	Number.	Number per 1000 of Total Populat'n.	Number.	Number per 1000 of Total Populat'n.
States—							
N. S. Wales	1,646,734	11,507	6.99	6,145	3.73	17,652	10.72
Victoria ...	1,315,551	6,049	4.60	1,582	1.20	7,631	5.80
Queensland...	605,813	11,336	18.71	3,660	6.04	14,996	24.75
S. Australia...	408,558	1,079	2.64	893	2.19	1,972	4.83
W. Australia	282,114	5,658	20.05	1,624	5.76	7,282	25.81
Tasmania ...	191,211	541	2.83	362	1.89	903	4.72
Territories—							
N. Territory	3,310	1,612	487.01	280	84.59	1,892	571.60
Fed. Cap. Ter.	1,714	7	4.08	8	4.67	15	8.75
Total C'wealth	4,455,005	37,789	8.48	14,554	3.27	52,343	11.75

(ii.) *Biological and Sociological Significance.* As regards race and nationality, therefore, the population of Australia is fundamentally British, and thus furnishes an example of the transplanting of a race into conditions greatly differing from those in which it had been developed. The biological and sociological significance of this will ultimately appear in the effects on the physical and moral constitution produced by the complete change of climatic and social environment, for the new conditions are likely to considerably modify both the physical characteristics and the social instincts of the constituents of the population. At present the characteristics of the Australian population, whether physical, mental, moral, or social, are only in the making, and probably it will not be possible to point to a distinct Australian type until three or four generations more have passed. Even then it is hardly likely that with the great extent of territory and varying conditions presented by the Commonwealth there will be but one type; on the contrary, a variety of types may be expected. The Australian at present is little other than a transplanted Briton, with the essential characteristics of his British forbears, the desire for freedom from restraint, however, being perhaps more strongly accentuated. The greater opportunity for an open-air existence, and the absence of the restrictions of older civilisations, may be held to be in the main responsible for this.

4. *Differences among the States and Territories.*—(i.) *Sex Distribution.* The varying circumstances under which the settlement of the several States has been effected, and the essentially different conditions experienced in the due development of their respective resources, have naturally led to somewhat marked differences in the constitution of their populations. In the matter of sex distribution the States in which the normal condition of older countries is most nearly represented are those of Victoria, South Australia, and Tasmania, in the first-mentioned of which the females have, for some years until recently, exceeded the males. In Western Australia and Queensland, on the other hand, the position of affairs is somewhat abnormal, the numbers of males to each 100 females being respectively 133 and 119.

In the Northern Territory, owing to lack of settlement, the masculinity has always been largely predominant, the figures for 1911 giving no less than 454 males to each 100 females.

The variation in the masculinity of the estimated population of the several States and Territories and of the Commonwealth as a whole for the year 1901 and for the past five years will be seen from the following table:—

MASCULINITY^a OF THE POPULATION, 31st DECEMBER, 1901 and 1907-11.
(COMMONWEALTH.)

Year.	Masculinity of the Population on 31st December. (a.)								
	States.						Territories.		Cwlth.
	N.S.W.	Vict.	Qld.	S. Aust.	W. Aust.	Tas.	North- ern.	Federal Capital.	
1901	110.12	101.16	125.78	100.87	155.69	107.90	593.32	...	110.15
1907	111.55	96.61	119.08	101.28	135.08	104.69	482.09	...	107.93
1908	110.77	96.76	118.70	102.08	133.47	104.43	486.54	...	107.64
1909	109.96	97.68	119.41	102.34	132.33	104.13	508.16	...	107.71
1910	109.23	98.71	119.02	103.12	132.90	104.14	486.32	...	107.87
1911	108.62	101.34	118.93	103.47	133.32	103.91	454.27	125.21	108.54

(a.) Number of males to each 100 females.

(ii.) *Age Distribution.* The disparity in sex distribution exhibited by the several States is accompanied by a corresponding inequality in the matter of age distribution. The number of persons in each State at the Census of 3rd April, 1911, at what are commonly known as the "dependent," "supporting," and "old" ages, and the proportion of same to total of each State and Commonwealth, were as follows:—

NUMBER AND PROPORTION OF PERSONS IN THE COMMONWEALTH OF DEPENDENT, SUPPORTING, AND OLD AGE, 3rd APRIL, 1911.

State or Territory.	Number of Persons of				Proportion of Population of		
	Dependent age (under 15).	Supporting age (15 and under 65).	Old age (65 and upwards).	All ages.	Dependent age (under 15).	Supporting age (15 and under 65).	Old age (65 and upwards).
States—					%	%	%
New South Wales...	526,625	1,053,400	66,709	1,646,734	31.98	63.97	4.05
Victoria ...	400,260	847,700	67,591	1,315,551	30.42	64.44	5.14
Queensland ...	200,020	383,330	22,463	605,813	33.01	63.28	3.71
South Australia ...	127,290	262,356	18,912	408,558	31.15	64.22	4.63
Western Australia...	87,884	187,574	6,656	282,114	31.15	66.49	2.36
Tasmania ...	66,708	116,604	7,899	191,211	34.89	60.98	4.13
Territories—							
Northern Territory	485	2,708	117	3,310	14.65	81.81	3.54
Federal Capital Territory ...	551	1,081	82	1,714	32.15	63.07	4.78
Commonwealth ...	1,409,823	2,854,753	190,429	4,455,005	31.65	64.08	4.27

In Western Australia a larger proportion of its population was of supporting age than in any other State, whilst in Tasmania the proportion was the lowest. On the other hand, in Tasmania the proportion of dependent age was the highest for the Commonwealth, while the Western Australian proportion was the lowest. Victoria had the highest and Western Australia the lowest proportion of persons aged 65 years and upwards.

In the Northern Territory the proportions are quite exceptional, the percentage of those of dependent age being much lower, and that of those of supporting age being much higher, than in any other part of the Commonwealth.

(iii.) *Birthplaces.* The following table exhibits, in a very condensed form, the distribution of the population of the several States and Territories according to birthplace:—

BIRTHPLACE OF POPULATION AT CENSUS OF 3rd APRIL, 1911. (COMMONWEALTH.)

Birthplace.	Total Population of Commonwealth at Census.								
	States.						Territories.		C'wealth.
	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	North-ern.	Fed. Cap.	
Australia...	1,377,219	1,108,945	446,695	350,261	209,050	172,497	1,505	1,500	3,667,672
New Zealand	13,963	10,067	2,576	986	3,054	1,200	18	4	31,868
United Kingdom	204,394	157,436	120,015	44,431	50,552	13,472	262	160	590,722
Other European Countries	19,771	15,346	20,227	7,989	9,428	1,134	49	5	73,949
Asia ...	11,463	6,676	8,867	1,244	5,996	778	1,413	5	36,442
Africa ...	1,999	1,498	527	357	423	145	9	...	4,958
America ...	4,424	2,983	1,688	764	1,123	279	12	5	11,278
Polynesia	1,204	279	1,728	55	88	44	12	...	3,410
At Sea ...	1,479	1,303	629	422	281	122	2	...	4,238
Unspecified	10,818	11,018	2,861	2,049	2,119	1,540	28	35	30,468
Total ...	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

The proportions for the several States and Territories for each of the birthplaces shewn in the foregoing table expressed as percentages of the total population, the birthplaces of which were specified, are as follows:—

PERCENTAGE OF COMMONWEALTH POPULATION ACCORDING TO BIRTHPLACE,

3RD APRIL, 1911.

Birthplace.	Percentage of Total Population.								
	States.						Territories.		C'with.
	New South Wales.	Victoria.	Queensland.	South Australia	Western Aust.	Tasmania.	Northe'n	Federal Capital.	
	%	%	%	%	%	%	%	%	%
Australia ...	84.19	85.01	74.09	86.16	74.66	90.95	45.86	89.34	82.90
New Zealand ...	0.86	0.77	0.43	0.24	1.10	0.63	0.55	0.24	0.72
U. Kingdom ...	12.49	12.07	19.90	10.93	18.05	7.10	7.98	9.53	13.35
Other E'pean Countries	1.21	1.18	3.35	1.97	3.37	0.60	1.49	0.30	1.67
Asia ...	0.70	0.51	1.47	0.31	2.14	0.41	43.05	0.29	0.82
Africa ...	0.12	0.11	0.09	0.09	0.15	0.08	0.27	...	0.11
America ...	0.27	0.23	0.28	0.19	0.40	0.15	0.37	0.30	0.25
Polynesia ...	0.07	0.02	0.29	0.01	0.03	0.02	0.37	...	0.08
At Sea ...	0.09	0.10	0.10	0.10	0.10	0.06	0.06	...	0.10
Total ...	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

As regards distribution in the States according to birthplace, the population of New South Wales is very similar to that of Victoria, the proportions born in the United Kingdom and Asia being slightly higher, and that born in Australia slightly lower, in the case of New South Wales. There is also a rough similarity between the population distributions of Queensland and Western Australia. In both, the Australian-born represent a much smaller, and those born in the United Kingdom, in "Other European Countries" and in Asia, a much larger proportion than is the case with the remaining States. Polynesians were, however, more numerously represented in Queensland at the date of the Census than in any other State. Natives of New Zealand were, proportionately, most numerous in Western Australia. Tasmania had the largest proportion of Australian-born population, viz., 91 per cent., while Queensland, with 74 per cent., had the smallest. On the other hand, nearly 20 per cent. of Queensland's population consisted of natives of the United Kingdom, while only 7 per cent. of the population of Tasmania had been born there. For the Commonwealth as a whole, over 98½ per cent. of the population were from Australasian or European birthplaces.

In the case of the Northern Territory, about 46 per cent. of the population were Australian born, while 43 per cent. were of Asiatic birth.

§ 3. Post-censal Adjustment of Population Estimates for the Intercensal Period, 1901-1911.

1. **Census Results.**—On the 31st March, 1901—or, rather, at the moment of midnight between 31st March and 1st April of that year—the population of Australia was determined by means of a census, taken under the census laws of the several States, the control of the necessary administrative organisation being placed in the hands of the State Statisticians. The total population of the Commonwealth so found was as follows, viz.:—

Males, 1,977,928; Females, 1,795,873; **Total, 3,773,801.**

On the 3rd April, 1911, a similar enumeration was carried out under the control of the Commonwealth Statistician, in accordance with the Commonwealth Census and Statistics Act 1905, which itself conferred the necessary powers. The population of the Commonwealth as then ascertained was as follows :—

Males, 2,813,035 ; Females, 2,141,970 ; **Total, 4,455,005.**

In both cases the figures given are exclusive of full-blooded aboriginal natives of Australia, but are inclusive of half-caste aboriginals.

It should be noted, in connection with the census of 1911, that a slight change in defining the date of reference has been made in order to accord with the English practice. In previous Australian censuses the date of the census has been taken to be that of the day preceding the midnight which is adopted as the determining point. Thus, at the census of 1901, where the figures given relate approximately to midnight between the 31st March and the 1st April, the "Australian census was stated to be that of the 31st March, while in a precisely similar case in England it was stated to be that of 1st April. At the census of 1911, taken as at midnight between the 2nd and 3rd April, the date of the census has, in accordance with the English practice, been stated to be the 3rd April, and that day was gazetted as the day of the census.

2. Intercensal Records.—Between the date of the censuses of 1901 and 1911 there elapsed 10 years and 2 days. During the whole of this intercensal period records were kept of the effect of the several elements contributing to variations in population—(i.) of the Commonwealth as a whole, and (ii.) of the component States and Territories of the Commonwealth. As regards the former, the only variations possible were additions by birth and by oversea arrivals and deductions by death and by oversea departure, where the term "oversea" refers to all countries outside the Commonwealth, and to those alone. As regards the latter—viz., the populations of the component States and Territories—inter-State migration also operates, and this may be either by land or by sea. In the case of any particular State, therefore, to which migration by land is possible, there were eight distinct sets of records kept, viz.:—(i.) births registered ; (ii.) deaths registered ; (iii.) oversea arrivals ; (iv.) inter-State arrivals by sea ; (v.) inter-State arrivals by land ; (vi.) oversea departures ; (vii.) inter-State departures by sea ; (viii.) inter-State departures by land.

The records of inter-State migration by land are necessarily incomplete, as the only particulars of this nature which it is practicable to collect are those relating to migration by rail. Incidentally, it may be observed that any efficient method of obtaining the record of overland migration, other than by rail, would be found intolerably irksome. The records of this kind exist, therefore, only in the case of those States which are connected by rail—viz., New South Wales, Victoria, Queensland, and South Australia, and then only to the extent to which such migration takes place by rail.

3. Comparison of Census Results with those Derived from Intercensal Records.—Taking, first, the case of the Commonwealth as a whole, the number of births registered during the 10 years from 1st April, 1901, to 31st March, 1911, was as follows :—

Males, 552,983 ; Females, 525,218 ; **Total, 1,078,201.**

Against this must be set off the deaths registered, as follows :—

Males, 261,661 ; Females, 192,447 ; **Total, 454,108.**

The natural increase—viz., the excess of births over deaths—during the decennium was therefore—

Males, 291,322 ; Females, 332,771 ; **Total, 624,093.**

The oversea arrivals in the Commonwealth, as recorded during the decennium, were—

Males, 456,742 ; Females, 208,013 ; **Total, 664,755.**

During the same period the oversea departures as recorded were—

Males, 360,705 ; Females, 177,318 ; **Total, 538,023.**

Thus, by the records, the net immigration to the Commonwealth—that is, the excess of oversea arrivals over oversea departures—during the decennium was as follows:—

Males, 96,037; Females, 30,695; **Total, 126,732.**

Taking these recorded results in conjunction with the population at the census of 31st March, 1901, an estimate of the population at 31st March, 1911, is obtained as follows:—

Particulars.	Males.	Females.	Total.
Census population, 31st March, 1901 ...	1,977,928	1,795,373	3,773,801
Natural increase recorded during decennium ...	291,322	332,771	624,093
Net immigration " " ...	96,037	30,695	126,732
Estimated population, 31st March, 1911, based on recorded intercensal data ...	2,365,287	2,159,339	4,524,626

In order to be able to compare this result with that obtained at the census of 1911, it is necessary to make a small allowance for the differences in date, as the above estimate relates to 31st March, 1911, while the census figures relate to the midnight which marks the termination of the 2nd April. Exact records for the first two days of April are not available, but a sufficiently close approximation is obtained by taking the one-fifteenth part of the totals recorded for that month. This gives the following results:—

Particulars.	Males.	Females.	Total.
Census population on 3rd April, 1911 ...	2,313,035	2,141,970	4,455,005
Less estimated increase during 1st and 2nd April, 1911 ...	376	263	644
Estimated population on 31st March, 1911, as based on census results of 3rd April, 1911 ...	2,312,659	2,141,702	4,454,361

A comparison of this estimate for 31st March, 1911, with that for the same date based on intercensal records, indicates that the effect of using the intercensal records exactly as furnished would be the *overstatement* of the population of the Commonwealth at the 31st March, 1911, by the following numbers, viz.:—

Males, 52,628; Females, 17,637; **Total, 70,265.**

This overstatement indicates a steady accumulation of error at an average rate of about 7000 per annum, and suggests the desirability of at least a check-count or minor census more frequently than once in ten years. Statisticians throughout the world are in agreement as to the advantages of quinquennial censuses.

4. Causes of Discrepancy.—It is clear, from the nature of the case, that errors in excess or defect are probable in all records of population, and in all records of its fluctuations; and, further, that errors in defect are in most cases more likely to occur than errors in excess. That is to say, omissions to record are probably more frequent than duplications of record. Owing to the provisions made for securing accuracy, it is probable that the errors in the census records, and, in Australia, in the registration of births and deaths, are not serious in their effect on the population results. There are, of course, no means of independently testing the accuracy of a census. It is so conducted that it must be accepted as of the highest practicable accuracy and final. As regards records of birth, death, and migration, it may be noted, first as regards registrations, that if in practice birth registration was seriously defective, the effect, so far as this element alone is concerned, would be to cause the enumerated results to exceed the intercensal estimate. If any such defect has actually existed it has been much more than counterbalanced by

some defect of an opposite nature, arising from other causes, and hence, in the absence of some direct evidence, the existence of such defect in any marked degree cannot be assumed. As regards the registration of deaths, the stringent provisions of the law throughout Australia in relation to certification of cause of death, and to the disposal of a dead body, renders it wholly improbable that there is any error of serious magnitude from omission to register. In the case of the census records, the fact that the taking of the census is widely advertised, that a very extensive collecting organization is instituted for the special purpose, and that every effort is made after census day to make good any omissions, renders it improbable that any appreciable defect can be attributed thereto. There remain, then, in the case of the Commonwealth as a whole, the records of oversea arrivals and departures, and there appears to be no reasonable ground for doubting that the greater part of any ascertainable discrepancy is properly chargeable thereto. In this connection an important point requires to be borne in mind—viz., that at the date of the census all persons on board of vessels in Commonwealth ports, or on voyage between Commonwealth ports, are included as part of the population of Australia, whether such persons are on board in the capacity of passengers or of crew. It is also to be borne in mind that the oversea migration recorded during the intercensal period relates practically only to passengers, and to individual members of crew actually engaged, discharged, or deserting in Australia, it being assumed that the crews of incoming and outgoing vessels substantially balance each other. It is thus clear that if, at the date of any census, there were many vessels in Australian waters, the actual population at a subsequent date might differ somewhat materially from the estimated, owing simply to the fact that the departure of certain of these vessels was not approximately counterbalanced by the arrival of others. In other words, that portion of the population of Australia, which consists of crews of oversea vessels, has always, in the compilation of Australian population statistics, been tacitly assumed, as already said, to maintain a condition of equilibrium through equality of influx and efflux. In view of the degree of uncertainty involved in this tacit assumption, it is clear that any attempt at great refinement in the matter of oversea migration statistics would be illusory and unwarranted. It is thus evident that, while the discrepancy between enumerated and estimated population arises from numerous causes, the bulk of it is due to errors of migration record. And since, as before noted, errors of omission are more probable than errors of duplication, and since, further, the resultant error is usually that of overstatement of population, it is reasonably certain that the major portion of the discrepancy is due to omission to record departures. This conclusion, which has been arrived at from general considerations, is confirmed by actual experience, as it has been found that in many cases discrepancies have arisen through late bookings or passages taken on board, thus resulting in unrecorded departures.

5. Adjustment of Discrepancy.—For practical purposes it has been found convenient to attribute the whole of the discrepancy to defects in the records of departure, and, in readjusting population estimates between two censuses, to ascertain the ratio of the discrepancy to the aggregate recorded departures, in order to apply this ratio to the departures recorded for successive periods. This method does not appear to be open to any serious objection. Since it is simple in application and gives results which are probably not wide of the truth at any moment during the intervening period, and in the aggregate are doubtless as accurate as figures furnished by any other possible method, it has been adopted on the present occasion for adjusting the Commonwealth population estimates for the whole of the intercensal period.

6. Adjustment of Commonwealth Discrepancy.—From the figures given in section 3 above it will be seen that the discrepancy, as ascertained for 31st March, 1911, represented approximately 14.59 per cent. of the aggregate male oversea departures for the decennium, and approximately 9.95 per cent. of the aggregate female oversea departures. Applying these percentages to the recorded oversea departures for the successive periods the requisite corrections are obtained by means of which an adjusted estimate of the

population of the Commonwealth is obtained for successive quarters throughout the intercensal decennium. A comparison of the results so obtained with the estimates published from time to time by the Commonwealth Bureau of Census and Statistics is important, as shewing to what magnitude the errors in question can accumulate, and is as follows :—

POPULATION OF THE COMMONWEALTH, ESTIMATED AND ADJUSTED, 1901 to 1910.

31st Dec.	Commonwealth Intercensal Estimate.			Adjustment on basis of Census Results.			Excess of Intercensal Estimate over Post-censal Adjustment.			
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	
1901	2,006,784	1,819,502	3,826,286	2,004,836	1,820,077	3,824,913	1,948	—	575	1,373
1902	2,037,710	1,845,369	3,883,079	2,028,008	1,847,310	3,875,318	9,702	—	1,941	7,761
1903	2,059,444	1,867,525	3,926,969	2,045,144	1,871,448	3,916,592	14,300	—	3,923	10,377
1904	2,092,818	1,891,572	3,984,390	2,073,763	1,901,367	3,975,150	20,085	—	9,795	10,240
1905	2,133,978	1,918,452	4,052,430	2,100,118	1,932,859	4,032,977	33,860	—	14,407	19,453
1906	2,173,545	1,945,936	4,119,481	2,126,730	1,964,755	4,091,485	46,815	—	18,819	27,996
1907	2,212,480	1,984,557	4,197,037	2,160,213	2,001,509	4,161,722	52,267	—	16,952	35,315
1908	2,252,027	2,023,279	4,275,306	2,193,961	2,038,297	4,232,278	58,046	—	15,018	43,028
1909	2,305,637	2,068,501	4,374,138	2,242,215	2,081,745	4,323,960	63,422	—	13,244	50,178
1910	2,365,549	2,117,347	4,482,896	2,296,308	2,128,775	4,425,083	69,241	—	11,428	57,813

NOTE.—The minus (—) sign denotes excess of post-censal adjustment over intercensal estimate.

Incidentally, it may be here noticed, that the methods adopted up to 1906 inclusive, shew a persistent and increasing relative loss of females from the Commonwealth (indicated by the minus sign). The significance of so extraordinary a result is referred to later.

6. Intercensal Estimates of State Population.—Having ascertained the adjusted results for the Commonwealth as a whole, the next problem was that of adjusting the populations of the several States in such a manner as to furnish results which, in the aggregate, would coincide for any date with that already determined for the whole Commonwealth. The data available for this purpose, in addition to the birth and death records and the returns of oversea arrivals and departures, comprised returns of inter-State migration by sea and by rail. Up to the end of 1906 these inter-State records had been compiled on the basis of returns and computations of the several State statistical authorities; but from the beginning of 1907 onwards they have been based on returns specially collected on behalf of the Commonwealth Bureau of Census and Statistics. In the earlier period, as each State was acting on its own account, without any definite system of co-ordinating the results for the Commonwealth as a whole, the question of ensuring that the State aggregates should coincide with the results of the whole Commonwealth was not in any way considered. As a matter of fact, a Commonwealth total obtained by adding together the State totals was usually considerably in error. It has been found that by this process the Commonwealth population, or its distribution according to sex, was varied materially from no other cause than a transfer from one State to another. After a careful consideration of this aspect of the question, the Commonwealth Statistician, who under the laws of the Commonwealth is solely responsible for the estimates of population, decided that such an anomalous position of affairs could not be allowed to continue, and consequently a system was introduced under which, for any period, all inter-State arrivals were duly accounted for as departures from other States—viz., the States from which they were reported to have come. This principle was applied to inter-State migration both by sea and by rail. In the case of migration by rail there were, up to the end of 1907, in operation no less than three distinct methods of recording such migration—

- (a) by single ticket records (Victoria and South Australia);
- (b) by return ticket records (New South Wales);
- (c) by actual count at border stations (Queensland).

In the case of ticket records, as no information was available concerning the sexes of the persons travelling on these tickets, an assumption was made that the proportion of the two sexes in the migration to or from any State by rail might be regarded as the same proportion ascertained to exist in the corresponding migration by sea. This naturally led to anomalous results. For example, a train-load of passengers leaving Victoria would, as departures from that State, be distributed as regards sex in proportion to the Victorian departures by sea, but the same train-load, on arriving in New South Wales, would be distributed as regards sex, in the proportion of New South Wales arrivals by sea. By such means the sex distribution of the population of the Commonwealth would be altered merely by a transfer of population from one part of the Commonwealth to another. Such extraordinary inconsistencies were wholly ignored by the State statisticians, since they were concerned only with the results as deduced for their own States; but they could *not* be ignored by anyone dealing with the population of the entire Commonwealth—a fact which reveals very clearly the advantage of a central authority dealing with the question. A consideration of all the facts led to the conclusion that, for the compilation of statistics of inter-State migration by sea, only records of arrivals should be used, these being also preferable, as already pointed out, on other grounds. The analysis of such arrivals according to States of departure give the requisite statistics of departures, and ensure that the population of the Commonwealth shall not be increased or diminished by the mere fact of transfer from one State to another. In the case of inter-State migration by rail, the system of counting at border stations is preferable to the ticket system, for the following reasons:—

- (i.) Statistics of sex can be obtained direct.
- (ii.) All migration by rail will be recorded, regardless of whether the traveller has or has not a ticket, or is adult or infant.
- (iii.) It furnishes a direct count, instead of compelling the statistician to rely upon questionable inferences.

Under the ticket system, not only is sex not registered, but through-passengers, passengers on season tickets and passes, and infants go unrecorded. Moreover, the actual ticket records are not identical in the several States, and consequently in this case also fictitious gains or losses to the Commonwealth result from the mere fact of inter-State transfers. In short, the system is one which does not arithmetically balance, and must consequently be rejected as inherently unsatisfactory. On the other hand, under the system now adopted by the Commonwealth, every inter-State credit of population to any State is accompanied by a corresponding debit to some other State, thus maintaining consistency of total population, which consistency, as already explained, did not exist in the method superseded.

7. Post-censal Adjustments of State Populations.—One of the first steps to be taken in the post-censal adjustment of the State populations for the decennium 1901-1911 was that of remedying the defect due to the want of identity between aggregate inter-State arrivals and departures for the successive quarters of the earlier portion of the decennium—that is, to the end of 1906. The figures for 1907 were so adjusted when the Commonwealth system of migration was introduced in 1908, and figures for succeeding years were so determined as to require no such adjustment. For the purpose of this adjustment to the end of 1906, the inter-State departures by sea and by rail were dealt with separately. In each case the recorded inter-State departures for any quarter for each State were multiplied by such a factor as would make the aggregate inter-State departures for the quarter identical with the aggregate inter-State arrivals. As regards overseas migration to and from the several States, the arrivals were allowed to stand as recorded, while the departures for each State were corrected by means of the factor

determined for the Commonwealth as a whole. This was necessary, inasmuch as there was no direct warrant for preferring the records of any particular State as being more accurate in this respect than the records of any other State. After these adjustments had been effected, there still remained a correction for the defective record of inter-State migration, other than the want of coincidence between the aggregates of arrivals and departures. The extent of this residual error in the case of each sex in each State was determined by computing, from the adjusted figures derived in accordance with the foregoing scheme, the estimated population of each sex as at 31st March, 1911, and comparing this with the corresponding figure deduced from the records of the census of 3rd April, 1911. As the result of this comparison it was found that the residual errors, remaining for adjustment, were as follows:—

State.	Males.	Females.	Persons.
New South Wales ...	— 4,899	— 1,736	— 6,135
Victoria ...	+ 5,677	+ 495	+ 5,182
Queensland ...	— 10,039	— 155	— 10,194
South Australia ...	+ 13,933	+ 2,179	+ 16,112
Western Australia ...	— 549	+ 598	+ 49
Tasmania ...	— 4,623	— 391	— 5,014
Commonwealth ...	—	—	—

It was necessary that these errors should be so adjusted that at any point of time during the decennium the aggregate of the several adjustments should be zero. The application of the correction as a percentage, on, say, recorded departures, would in practice involve awkward complications. A careful consideration of this matter led to the conclusion that a uniform distribution of the error in each case over the 40 quarters comprised in the decennium would probably accord as closely with the actual (but unknown) facts as any that could be devised, and would, in addition, be simple in application as well as satisfactory from the standpoint of Commonwealth total. The corrections so applied to the figures for the several quarters were approximately as follows:—

State.	Males.	Females.	Persons.
New South Wales ...	+ 110	+ 43	+ 153
Victoria ...	— 142	+ 12	— 130
Queensland ...	+ 251	+ 4	+ 255
South Australia ...	— 348	— 54	— 402
Western Australia ...	+ 14	— 15	— 1
Tasmania ...	+ 115	+ 10	+ 125
Commonwealth ...	—	—	—

On the basis of these principles the populations of the several States as at the end of each quarter from 31st March, 1901, to 31st March, 1911, have been determined, and from these the mean populations for the several intercensal years have been computed. These re-computed means have been employed in the adjustment of all intercensal rates based upon population.

§ 4. Commonwealth Population—Its Distribution and Fluctuation.

1. **Present Population.**—The estimated population of the several States of the Commonwealth at the end of 1901 and of each of the last five years is as shewn in the following table. These estimates have been amended on the basis of the results disclosed by the Census of 3rd April, 1911, as described in § 3, above.

POPULATION OF COMMONWEALTH, on 31st DECEMBER, 1901, 1907-11.

Year.	States.						Territories.		Common-wealth.
	New South Wales.	Victoria.	Queens-land.	South Australia.	Western Australia.	Tas-mania.	North. Ter.	Fed. Cap. Ter.	
MALES.									
1901	720,840	608,436	282,291	180,440	117,885	90,945	3,999	...	2,004,836
1907	823,413	605,775	296,670	188,023	146,264	96,973	3,095	...	2,160,213
1908	832,419	614,937	302,370	194,903	148,447	97,942	2,963	...	2,193,981
1909	845,228	631,021	314,481	198,719	151,325	98,514	2,927	...	2,242,215
1910	858,181	646,482	325,513	206,557	157,971	98,866	2,738	...	2,296,308
1911	888,138	668,759	337,955	212,650	168,094	98,594	2,662	1,068 (a)	2,377,920
FEMALES.									
1901	654,615	601,464	224,430	178,890	75,716	84,288	674	...	1,820,077
1907	738,159	627,032	249,135	185,640	108,276	92,625	642	...	2,001,509
1908	751,504	635,512	254,729	190,928	111,224	93,791	609	...	2,038,297
1909	768,671	646,001	263,364	194,178	114,350	94,605	576	...	2,081,745
1910	785,674	654,926	273,503	200,311	118,861	94,937	563	...	2,128,775
1911	808,337	670,343	284,174	205,522	126,087	94,885	586	853 (a)	2,190,787
TOTAL.									
1901	1,375,455	1,209,900	506,721	359,330	193,601	175,233	4,673	...	3,824,913
1907	1,561,572	1,232,807	545,805	373,663	254,540	189,598	3,737	...	4,161,722
1908	1,583,923	1,250,449	557,099	385,831	259,671	191,733	3,572	...	4,232,278
1909	1,613,899	1,277,022	577,845	392,897	265,675	193,119	3,503	...	4,323,960
1910	1,643,855	1,301,408	599,016	406,868	276,832	193,803	3,301	...	4,425,083
1911	1,696,475	1,339,102	622,129	418,172	294,181	193,479	3,248	1,921 (a)	4,568,707

(a) Part of New South Wales prior to 1911.

2. **Growth of Population.**—(i.) 1788 to 1824. From 1788, when settlement first took place in Australia, until December 1825, when Van Diemen's Land became a separate colony, the whole of the British Possessions in Australia were regarded as one colony, viz., that of New South Wales. The population during this period increased very slowly, and at the end of 1824 had reached only 48,072.

The population with which settlement in Australia was inaugurated, and that at the end of each year until 1824, are as follows:—

POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1788 to 1824.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1788 ^a	...	...	1,035	1806	5,389	2,521	7,910
1788	...	...	859	1807	5,939	2,855	8,794
1789	...	...	645	1808	6,822	3,441	10,263
1790	...	...	2,056	1809	7,618	3,942	11,560
1791	...	...	2,873	1810	7,585	3,981	11,566
1792	...	...	3,264	1811	7,697	4,178	11,875
1793	...	...	3,514	1812	8,132	4,498	12,630
1794	...	...	3,579	1813	9,102	4,855	13,957
1795	...	...	3,466	1814	9,295	4,791	14,086
1796	2,953	1,147	4,100	1815	9,848	5,215	15,063
1797	3,160	1,184	4,344	1816	11,690	5,863	17,553
1798	3,367	1,221	4,588	1817	14,178	7,014	21,192
1799	3,804	1,284	5,088	1818	17,286	8,573	25,859
1800	3,780	1,437	5,217	1819	21,366	10,106	31,472
1801	4,372	1,573	5,945	1820	23,784	9,759	33,543
1802	5,208	1,806	7,014	1821	26,179	9,313	35,492
1803	5,185	2,053	7,238	1822	27,915	9,449	37,364
1804	5,313	2,285	7,598	1823	30,206	10,426	40,632
1805	5,395	2,312	7,707	1824	36,871	11,201	48,072

a. On 26th January.

(ii.) *1825 to 1858.* The period extending from 1825 to 1859 witnessed the birth of the colonies of Tasmania (then known as Van Diemen's Land), Western Australia, South Australia, Victoria, and Queensland. The years in which these came into existence as separate colonies were as follows:—Tasmania, 1825; Western Australia, 1829; South Australia, 1834; Victoria, 1851; Queensland, 1859.

The estimated population of the Commonwealth during each year of this transition period is as follows:—

POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1825 to 1858.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1825	40,288	12,217	52,505	1842	153,758	87,226	240,984
1826	41,289	12,593	53,882	1843	158,846	92,002	250,848
1827	43,053	13,247	56,300	1844	165,034	99,253	264,287
1828	44,778	13,419	58,197	1845	173,159	105,989	279,148
1829	46,946	14,988	61,934	1846	181,342	111,907	293,249
1830	52,885	17,154	70,039	1847	190,265	118,532	308,797
1831	57,037	18,944	75,981	1848	201,612	130,716	332,328
1832	62,254	21,683	83,937	1849	221,978	151,384	373,362
1833	71,669	26,426	98,095	1850	238,683	166,673	405,356
1834	76,259	29,297	105,556	1851	256,975	180,690	437,665
1835	81,929	31,425	113,354	1852	304,126	209,670	513,796
1836	89,417	35,703	125,120	1853	358,203	242,789	600,992
1837	94,881	39,607	134,488	1854	414,337	280,580	694,917
1838	105,271	46,597	151,868	1855	470,118	323,142	793,260
1839	115,480	54,459	169,939	1856	522,144	354,585	876,729
1840	127,306	63,102	190,408	1857	574,800	395,487	970,287
1841	144,114	76,854	220,968	1858	624,380	426,448	1,050,828

(iii.) *1859 to 1911.* From 1859, the year in which Queensland came into existence as a separate colony, until the beginning of 1901, when the Commonwealth of Australia was inaugurated under the provisions of the Commonwealth Constitution Act, Australia consisted of six States, practically independent of each other in all matters of government. During this period, the population of the Commonwealth increased from 1,050,828 at the end of 1858 to 3,765,339 on the 31st December, 1900. The particulars for this period are given in the table hereunder.

During the eleven years that have elapsed since the federation of the States was effected the population of the Commonwealth has increased by 803,368, from 3,765,339 on 31st December, 1900, to 4,568,707 on 31st December, 1911. See table hereunder:—

POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1859 to 1911.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1859	644,376	452,929	1,097,305	1886	1,510,954	1,277,096	2,788,050
1860	668,560	477,025	1,145,585	1887	1,559,118	1,322,244	2,881,362
1861	669,373	498,776	1,168,149	1888	1,610,548	1,371,129	2,981,677
1862	683,650	523,268	1,206,918	1889	1,649,094	1,413,383	3,062,477
1863	704,259	555,033	1,259,292	1890	1,692,831	1,458,524	3,151,355
1864	740,433	584,750	1,325,183	1891	1,736,617	1,504,368	3,240,985
1865	773,278	616,765	1,390,043	1892	1,766,772	1,538,981	3,305,753
1866	800,648	643,307	1,443,955	1893	1,791,815	1,570,080	3,361,895
1867	819,127	664,721	1,483,848	1894	1,824,217	1,602,543	3,426,760
1868	849,272	690,280	1,539,552	1895	1,855,539	1,636,082	3,491,621
1869	875,139	717,018	1,592,157	1896	1,887,174	1,665,924	3,553,098
1870	902,494	745,262	1,647,756	1897	1,917,460	1,700,323	3,617,783
1871	928,918	771,970	1,700,888	1898	1,937,629	1,727,086	3,664,715
1872	947,422	795,425	1,742,847	1899	1,959,074	1,756,914	3,715,988
1873	972,907	821,613	1,794,520	1900	1,976,992	1,788,347	3,765,339
1874	1,001,096	848,296	1,849,392	1901	2,004,836	1,820,077	3,824,913
1875	1,028,489	869,734	1,898,223	1902	2,028,008	1,847,310	3,875,318
1876	1,061,477	897,202	1,958,679	1903	2,045,144	1,871,448	3,916,592
1877	1,102,340	928,790	2,031,130	1904	2,072,783	1,901,367	3,974,150
1878	1,132,573	959,591	2,092,164	1905	2,100,118	1,932,859	4,032,977
1879	1,168,781	993,562	2,162,343	1906	2,126,730	1,964,755	4,091,485
1880	1,204,514	1,027,017	2,231,531	1907	2,160,213	2,001,509	4,161,722
1881	1,247,059	1,059,677	2,306,736	1908	2,193,981	2,038,297	4,232,278
1882	1,289,892	1,098,190	2,388,082	1909	2,242,215	2,081,745	4,323,960
1883	1,357,423	1,148,313	2,505,736	1910	2,296,308	2,128,775	4,425,083
1884	1,411,996	1,193,729	2,605,725	1911	2,377,920	2,190,787	4,568,707
1885	1,460,394	1,234,124	2,694,518				

It will be seen from the foregoing tables that the population of Australia attained its first million in 1858, seventy years after settlement was first effected; its second million nineteen years later, in 1877; its third million twelve years later, in 1889; and its fourth million sixteen years later, in 1905.

The growth of the total population of the Commonwealth generally, and of each State therein, is graphically shewn on page 175, and of each sex considered separately on pages 176 and 177.

3. Variations in Masculinity.—In the second issue of this publication, on pages 163 to 165, an extended table was published shewing the masculinity of the population of each of the States for each year from 1796 to 1907. The following table gives similar particulars for every fifth year from 1800 to 1910 and for the year 1911. The graphs corresponding to these figures will be found on page 181:—

MASCULINITY OF COMMONWEALTH POPULATION, 1800 to 1911.

Year.	States.						Territories.		C'wealth.
	N.S. W. (a)	Victoria.	Q'land.	S. A. (b)	W. Aust.	Tasmania	North'n Ter'y. (c)	Fed. Cap. Ter'y (d).	
1800	263.05	...	...	...	...	...	...	...	263.05
1805	233.35	...	...	...	...	...	...	...	233.35
1810	190.53	...	...	...	...	...	...	...	190.53
1815	188.84	...	...	...	...	...	...	...	188.84
1820	243.71	...	...	...	...	...	...	...	243.71
1825	325.51	...	...	...	...	341.71	...	...	329.77
1830	317.18	...	...	...	297.29	293.44	...	...	308.30
1835	268.40	...	...	...	190.26	251.68	...	...	260.71
1840	204.16	...	...	180.10	163.51	229.58	...	...	201.75
1845	153.33	...	...	132.75	150.22	215.62	...	...	163.37
1850	138.47	...	...	129.15	154.81	179.49	...	...	143.20
1855	125.08	187.40	...	100.62	193.55	123.65	...	...	145.48
1860	131.29	158.85	149.63	105.06	166.93	123.61	...	...	140.15
1865	120.08	129.60	158.47	109.11	173.90	116.42	...	...	125.38
1870	120.48	121.59	150.31	105.85	161.17	112.98	...	...	121.10
1875	119.09	114.46	152.61	107.24	148.61	111.45	...	...	118.25
1880	120.45	110.42	142.50	114.33	135.06	111.70	...	...	117.28
1885	121.95	110.61	143.95	110.58	135.47	110.73	...	...	118.33
1890	118.05	110.65	132.21	108.60	146.85	111.88	...	...	116.06
1895	113.78	105.23	128.15	105.05	126.54	108.16	...	...	113.41
1900	111.14	101.23	125.33	104.04	157.54	107.97	753.60	...	110.55
1905	111.05	97.69	121.75	100.17	141.35	106.09	496.76	...	108.65
1910	109.23	98.71	119.02	103.12	132.90	104.14	486.32	...	107.87
1911	109.87	99.76	118.93	103.47	133.32	103.91	454.27	125.21	108.54

(a) Including the Federal Capital Territory prior to 1911. (b) Including Northern Territory prior to 1911. (c) Included in South Australia prior to 1911. (d) Included in New South Wales prior to 1911.

§ 5. Influences affecting Growth and Distribution of Population.

1. **Mineral Discoveries.**—The discovery of gold in Australia in 1851 was undoubtedly one of the most influential factors in bringing about a rapid settlement of the country. Its effect may be gauged by a comparison of the increase during the ten years preceding, with that during the ten years succeeding the discovery. From 31st December, 1840, to 31st December, 1850, the increase was only 214,948 (viz., from 190,408 to 405,356). The rush of people to the newly-discovered goldfields during the succeeding decennium caused an increase of no less than 740,229, the population advancing to 1,145,585 on 31st December, 1860. In 1861, owing to the opening up in that year of the New Zealand goldfields, a rush of population from Australia set in, the result being that the net increase of population of the Commonwealth, which in 1855 amounted to 98,343, and even in 1860 was as much as 48,290, fell in 1861 to 22,564. In fact, during the year 1861 the departures from Australia exceeded the arrivals by 5958, the gain of 22,564 being due to the births exceeding the deaths by 28,522.

In more recent years the gold discoveries of Western Australia in 1886 and subsequent years, led to such extensive migration to that State, that its population, which on 31st December, 1885, amounted to only 35,959, increased in 26 years by no less than 258,222, totalling 294,181 on 31st December, 1911. In this case, however, the additions to the population of the western State were largely drawn from those of the eastern States, so that the actual gain of population to the Commonwealth was but slight.

2. **Pastoral Development.**—Very early in the colonisation of Australia it was recognised that many portions were well adapted for pastoral pursuits, and pastoral developments have led to a considerable distribution of population in various directions. As the numbers engaged in connection therewith, compared with the value of the interests involved, are relatively small, and as pastoral occupancy tends to segregation

rather than aggregation of population, the growth of the pastoral industry is but slightly reflected in the population statistics of the Commonwealth.

3. Agricultural Expansion.—At the present time the area annually devoted to crops in the Commonwealth is over 12 millions of acres. Although considerable in itself, this area, viewed in relation to the total area of the Commonwealth, is relatively small, and represents only about $\frac{1}{5}$ per cent. of the total area. Per head of population of the Commonwealth the area under crop, however, is $2\frac{3}{4}$ acres, a fairly high amount when allowance is made for the recency of Australian settlement. About 82 per cent. of the area under crop is devoted to the production of wheat and hay, which require for their profitable production in Australia a considerable area in the one holding. Thus on the whole the agricultural districts of Australia are somewhat sparsely populated, though in a less marked degree than is the case in the pastoral areas.

4. Progress of Manufacturing Industries.—One direct effect of the development of manufacturing industries is the concentration of population in places offering the greatest facilities for the production of the particular commodities. In Australia, where manufacturing industries are as yet in their infancy, the tendency throughout has been to concentrate the manufacturing establishments in each metropolis. This has accentuated the growth of the capital cities, which growth, when compared with that of the rest of the country, appears somewhat abnormal.

5. Influence of Droughts.—The droughts, which at times so seriously affect the agricultural and pastoral prospects of Australia, have a marked influence on the distribution of population. Districts, which in favourable seasons were fairly populous, have, in times of drought, temporarily become more or less depopulated until the return of better conditions. This movement, however, ordinarily affects only the internal distribution of the population and not the total, but severe drought may even make its influence felt in the statistics of the total population of Australia. Thus in the case of the drought of 1902-3, the departures from the Commonwealth exceeded the arrivals for the two years 1903 and 1904 by 12,859. It may be noted also, that for the former of these years, the natural increase of population by excess of births over deaths was abnormally low, being only 51,150, as compared with 54,698 in the preceding and 60,541 in the succeeding year. As the solution of the problem of dealing with droughts is advanced, their influence will be less marked.

6. Other Influences.—(i.) *Commercial Crises.* The effect on population of a commercial crisis, such as that which occurred in Australia in the early years of the final decade of the last century, is clearly indicated on comparing the migration statistics of the Commonwealth for the five years 1887-91 with those for the five years 1892-96. During the former period, the arrivals in the Commonwealth exceeded the departures by no less than 146,872. In the latter period, the corresponding excess amounted to only 2064.

(ii.) *South African War.* The war in South Africa has apparently also left its impress on the population statistics of the Commonwealth, the departures during 1899 and 1900 exceeding the arrivals for the same period by no less than 10,546.

A reference to the graphs of population on pages 175 to 180 will illustrate the preceding observations.

§ 6. Elements of Growth of Population.

1. Natural Increase.—The two factors which contribute to the growth of a population are the "natural increase" by excess of births over deaths, and the "net immigration," i.e., the excess of arrivals over departures. While the relative potency of these factors depends upon a variety of causes, it may be said that, in general, in the case of a new country "net immigration" occupies an important position as a source of increase of population, while in an old country "natural increase," modified more or less by "net emigration," or excess of departures over arrivals, is the principal element causing growth of population. The table hereunder gives the total natural increase, as well as that of males and females:—

NATURAL INCREASE (a) OF THE POPULATION
OF STATES, TERRITORIES, AND COMMONWEALTH, FROM 1861 TO 1911.
MALES.

Period.	States.						Territories.		C'wealth.
	N S.W. (b)	Victoria.	Q'land.	S. Aust. (c)	W. Aus.	Tas.	Nor. Ter. (d)	Fed. Cap. Ter. (e)	
1861 to 1865 ...	22,055	34,286	2,444	9,645	765	3,761	...	...	72,956
1866 to 1870 ...	25,850	34,997	5,739	10,881	754	3,281	...	...	81,502
1871 to 1875 ...	30,067	35,132	6,704	9,979	710	3,077	...	...	85,669
1876 to 1880 ...	34,040	31,985	7,960	13,676	1,023	3,472	...	...	92,156
1881 to 1885 ...	42,658	33,614	7,986	16,969	1,002	5,284	...	...	107,513
1886 to 1890 ...	54,753	39,528	17,872	16,519	1,755	6,093	...	...	136,520
1891 to 1895 ...	56,834	45,606	20,525	15,758	1,436	6,889	...	...	147,048
1896 to 1900 ...	48,692	33,645	17,724	12,562	3,402	6,373	...	...	122,398
1901 to 1905 ...	51,179	34,332	16,628	12,149	8,283	7,955	—223	...	130,303
1906 to 1910 ...	64,127	38,948	21,415	14,500	10,762	8,703	—264	...	158,191
1911 ...	14,410	8,579	4,643	3,436	2,201	1,679	—43	12	34,917
1861 to 1911 ...	444,665	370,652	129,640	136,074	32,093	56,567	—530	12	1,169,173

FEMALES.

1861 to 1865 ...	26,343	39,615	3,566	9,987	1,105	4,415	...	...	85,031
1866 to 1870 ...	30,327	40,919	7,571	11,223	1,301	4,451	...	...	95,792
1871 to 1875 ...	35,567	41,472	9,706	10,944	1,255	4,192	...	...	103,136
1876 to 1880 ...	40,276	37,551	12,291	14,608	1,585	4,699	...	...	111,010
1881 to 1885 ...	50,204	39,833	15,262	18,033	1,738	6,364	...	...	131,434
1886 to 1890 ...	62,090	48,131	24,238	17,320	2,609	7,228	...	...	161,616
1891 to 1895 ...	63,930	53,190	25,757	16,792	3,376	7,781	...	...	170,826
1896 to 1900 ...	57,107	40,474	24,037	13,443	7,054	6,718	...	...	148,833
1901 to 1905 ...	59,163	39,831	22,910	12,701	11,468	8,027	28	...	154,128
1906 to 1910 ...	71,297	42,629	26,048	14,754	13,354	8,522	33	...	176,637
1911 ...	15,981	9,231	5,797	3,583	2,967	1,831	9	8	39,407
1861 to 1911 ...	512,285	432,876	177,183	143,388	47,812	64,228	70	8	1,377,850

PERSONS.

1861 to 1865 ...	48,398	73,901	6,010	19,632	1,870	8,176	...	...	157,987
1866 to 1870 ...	56,177	75,916	13,310	22,104	2,055	7,732	...	...	177,294
1871 to 1875 ...	65,634	76,604	16,410	20,923	1,965	7,269	...	...	188,805
1876 to 1880 ...	74,316	69,536	20,251	28,284	2,608	8,171	...	...	203,166
1881 to 1885 ...	92,862	73,447	23,248	35,002	2,740	11,648	...	...	238,947
1886 to 1890 ...	116,843	87,659	42,110	33,839	4,364	13,321	...	...	298,136
1891 to 1895 ...	120,764	98,796	46,282	32,550	4,812	14,670	...	...	317,874
1896 to 1900 ...	105,799	74,119	41,761	26,005	10,456	13,091	...	...	271,231
1901 to 1905 ...	110,342	74,163	39,538	24,850	19,751	15,982	—195	...	284,431
1906 to 1910 ...	135,424	81,577	47,463	29,254	24,116	17,225	—231	...	334,828
1911 ...	30,391	17,810	10,440	7,019	5,168	3,510	—34	20	74,324
1861 to 1911 ...	956,950	803,528	306,823	279,462	79,905	120,795	—460	20	2,547,023

(a) Excess of Births over Deaths. (b) Including Federal Capital Territory prior to 1911.
(c) Including Northern Territory prior to 1901. (d) Included in South Australia prior to 1901.
(e) Included in New South Wales prior to 1911.

NOTE.—Minus sign (—) denotes excess of Deaths over Births.

With two exceptions, viz., Tasmania, for the period 1906 to 1910, and the Northern Territory, the natural increase of females exceeded that of males throughout the years referred to in the foregoing table. The quinquennial period in which the largest natural increase of population took place was that of 1906-10 with a total for the Commonwealth of 334,828. For the individual States the quinquennia of maximum natural increase were as follows:—New South Wales, Queensland, Western Australia and Tasmania, 1906-10; Victoria, 1891-5, and South Australia, 1881-5.

2. Comparison with other Countries.—Notwithstanding its comparatively low birth-rate, Australia has a high rate of natural increase, owing to the fact that its death-rate is a very low one. The following table furnishes a comparison between the average rates of natural increase for some of the principal countries of the world for which such information is available, and those for the several States of the Commonwealth and the Dominion of New Zealand :—

NATURAL INCREASE PER 1000 OF MEAN POPULATION (VARIOUS COUNTRIES).

Country.	Increase.	Country.	Increase.	Country.	Increase.
Australasia(1907-11)		Europe— <i>continued.</i>		Europe— <i>continued.</i>	
Tasmania ...	18.45	Denmark ...	14.52	Spain ...	9.27
Western Australia	18.41	Rumania ...	14.34	Belgium ...	8.91
New South Wales	17.48	Servia ...	(a)14.04	Ireland ...	6.09
New Zealand ...	17.06	German Empire	(a)14.03	France ...	0.70
Queensland ...	17.05	Finland ...	13.57	Asia (1906-10)—	
Commonwealth	16.11	Norway ...	12.47	Japan ...	(a) 10.93
South Australia...	15.81	Hungary ...	11.68	Ceylon ...	6.73
Victoria ...	13.22	England & Wales	11.57	America(1906-10)—	
Europe (1906-10)—		Italy ...	11.44	Jamaica ...	13.08
Bulgaria ...	(a)18.88	Scotland ...	11.42	Canada (Province	
Netherlands ...	15.24	Austria ...	11.31	of Ontario) ...	9.71
Prussia ...	15.02	Sweden ...	11.15	Chile ...	7.03
		Switzerland ...	(a)9.86		

(a) 1905-9.

The graphs of natural increase for each of the States, as well as for the Commonwealth, are shewn on page 180.

3. Net Immigration.—The other factor of increase in the population, viz., the excess of arrivals over departures, known as "net immigration," is, from its nature, much more subject to marked and extensive variation than is the factor of "natural increase." These variations are due to numerous causes, many of which have already been referred to in dealing with the influences which affect the growth of population. An important cause not yet referred to, is that of assisted immigration. The number of persons so introduced varies considerably in different years.

NET IMMIGRATION, OR EXCESS OF ARRIVALS OVER DEPARTURES

(STATES, TERRITORIES AND COMMONWEALTH), FROM 1861 TO 1911 INCLUSIVE.

Period.	States.					Territories.		Cwealth
	N.S.W. (a)	Victoria.	Q'land.	S. Aust. (b)	W. Aust.	Tas.	N. Ter. (c)	F. C. Ter. (d)
MALES.								
1861 to 65	2,984	—15,871	34,031	10,270	3,213	—2,865	...	31,762
1866 to 70	23,381	13,516	10,190	— 242	1,182	—813	...	47,714
1871 to 75	20,346	—8,093	26,236	3,893	— 80	—1,916	...	40,326
1876 to 80	48,378	—5,696	13,892	25,056	— 179	2,418	...	83,869
1881 to 85	70,996	19,925	54,867	—1,982	2,701	1,860	...	148,367
1886 to 90	29,345	51,894	18,514	—12,895	6,411	2,648	...	95,917
1891 to 95	8,671	—33,192	5,088	—1,493	39,443	—2,857	...	15,660
1896 to 1900	— 854	—39,805	8,095	—8,239	36,953	2,905	...	— 945
1901 to 1905	15,671	—37,971	495	—11,031	28,127	—1,771	— 697	—7,177
1906 to 1910	11,157	9,400	12,291	10,590	711	—5,784	— 366	37,999
1911 ...	16,516	13,698	7,799	2,657	7,922	—1,951	— 33	87
1861 to 1911	246,591	—32,195	191,498	16,524	126,404	—7,626	—1,096	87
								540,187

(Throughout the minus sign (—) signifies that the number of departures was in excess of arrivals).

(a) Including Federal Capital Territory up to 1910. (b) Including Northern Territory up to 1900.

(c) Included in South Australia up to 1900. (d) Included in New South Wales up to 1910

NET IMMIGRATION, OR EXCESS OF ARRIVALS OVER DEPARTURES
(STATES, TERRITORIES AND COMMONWEALTH), FROM 1861
TO 1911 INCLUSIVE—Continued.

Period.	States.						Territories.		
	N.S.W. (a)	Victoria.	Q'land.	S. Aust. (b)	W. Aust.	Tas.	North'n Ter. (c)	Fed. Cap. Ter. (d)	C'wealth.
FEMALES.									
1861 to 65	8,578	21,527	18,824	5,998	952	1,165	...	...	54,709
1866 to 70	9,928	16,702	4,851	1,207	517	500	...	...	32,705
1871 to 75	9,395	2,498	11,187	774	18	2,500	...	...	21,336
1876 to 80	25,081	169	7,792	12,977	130	462	...	...	46,273
1881 to 85	38,867	7,861	27,526	100	957	562	...	...	75,873
1886 to 90	23,220	34,337	14,811	11,310	1,768	42	...	...	62,784
1891 to 95	12,793	13,656	422	1,964	7,758	1,705	...	...	6,732
1896 to 1900	143	23,777	927	7,627	32,043	2,009	...	...	3,432
1901 to 1905	1,566	21,984	2,398	8,448	22,293	726	81	...	9,616
1906 to 1910	9,390	10	7,780	4,403	1,867	4,023	148	...	19,279
1911	7,358	6,186	4,874	1,628	4,259	1,883	14	169	22,605
1861 to 1911	146,033	29,535	95,752	1,461	72,526	9,511	53	169	335,912
PERSONS.									
1861 to 65	11,562	5,656	52,855	16,263	4,165	4,030	...	...	86,471
1866 to 70	33,309	30,218	15,041	965	1,699	813	...	...	80,419
1871 to 75	29,741	5,595	37,423	4,607	98	4,416	...	...	61,662
1876 to 80	73,459	5,865	21,684	38,033	49	2,880	...	...	130,142
1881 to 85	109,863	27,786	82,393	2,082	3,658	2,422	...	...	224,040
1886 to 90	52,565	86,231	33,325	24,205	8,179	2,606	...	...	158,701
1891 to 95	21,464	46,848	4,666	471	47,201	4,562	...	...	22,392
1896 to 1900	997	63,582	9,022	15,866	68,996	4,914	...	...	2,487
1901 to 1905	17,237	59,955	1,903	19,479	50,420	2,497	616	...	16,793
1906 to 1910	20,547	9,410	20,071	14,993	2,578	9,807	514	...	57,278
1911	23,874	19,884	12,673	4,285	12,181	3,834	19	256	69,300
1861 to 1911	392,624	2,660	287,250	17,985	198,930	17,137	1,149	256	876,099

Throughout the minus sign (—) signifies that the number of departures was in excess of arrivals.

(a) Including Federal Capital Territory up to 1910. (b) Including Northern Territory up to 1900.

(c) Included in South Australia up to 1900. (d) Included in New South Wales up to 1910.

During the period 1861-1911, viz., 51 years, the gain to the Commonwealth population by excess of arrivals over departures was 876,099 persons, while the gain by excess of births over deaths for the same period was 2,547,023. That is, 25.59 per cent. of the increase for the Commonwealth during the past 51 years has been due to "net immigration" and 74.41 per cent. to "natural increase." In regard to the contribution by individual States to the total net immigration of 876,099, all showed a gain with the exception of Victoria and Tasmania, which in the period under review had an excess of departures over arrivals of 2660 and 17,137 respectively. In the case of South Australia, the gain was small, viz., 17,985. In New South Wales, Queensland, and Western Australia, on the other hand, the additions due to net immigration during the 51 years were respectively 392,624; 287,250, and 198,930.

The quinquennial period in which the greatest net immigration to the Commonwealth occurred was that of 1881-5 with a total of 224,040, whilst in the period 1901 to 1905, the departures exceeded the arrivals by 16,793. The quinquennial periods in which maximum net immigration occurred in the several States were as follows:—New South Wales and Queensland 1881-5, Victoria 1886-90, South Australia 1876-80, Western Australia and Tasmania 1896-1900. In all the States quinquennial periods have occurred in which the departures for the five years have exceeded the arrivals. The periods in which such net emigration from the several States was greatest were as follows:—New South Wales and Victoria 1896-1900, Queensland 1901-5, South Australia 1886-90, Western Australia 1871-5 and Tasmania 1906-10.

4. **Net Increase.**—The net increase of the population is found by the combination of the natural increase with the net immigration.

In the following table are set out the figures shewing the net increase in each quinquennium from 1861 onwards, and for the year 1911:—

NET INCREASE OF THE POPULATION OF THE STATES, TERRITORIES AND COMMONWEALTH FROM 1861 TO 1911.

MALES.

Period.	States.						Territories.		Commonwealth.
	N.S.W. (a)	Vict.	Q'land.	S. Aust. (b)	W. Aust.	Tas.	Nor. Ter. (c)	F. C. Ter. (d)	
1861 to 1865	25,039	18,415	36,475	19,915	3,978	896	...	...	104,718
1866 to 1870	49,231	48,513	15,929	10,639	1,936	2,968	...	...	129,216
1871 to 1875	50,413	27,039	32,940	13,812	630	1,161	...	...	125,995
1876 to 1880	82,418	26,289	21,852	38,732	844	5,890	...	...	176,025
1881 to 1885	113,654	53,539	62,853	14,987	3,703	7,144	...	...	255,880
1886 to 1890	84,098	91,422	36,386	3,624	8,166	8,741	...	...	232,437
1891 to 1895	65,505	12,414	25,613	14,265	40,879	4,032	...	...	162,708
1896 to 1900	47,838	6,160	25,819	4,323	40,355	9,278	...	...	121,453
1901 to 1905	66,850	3,639	17,123	1,118	36,410	6,184	920	...	123,126
1906 to 1910	75,284	48,348	33,706	25,090	11,473	2,919	630	...	196,190
1911	30,926	22,277	12,442	6,093	10,123	272	76	99	81,612
1861 to 1911	691,256	338,457	321,138	152,598	158,497	48,941	1,626	99	1,709,360

FEMALES.

1861 to 1865	34,921	61,142	22,390	15,980	2,057	3,250	...	...	139,740
1866 to 1870	40,255	57,621	12,422	12,430	1,818	3,951	...	...	128,497
1871 to 1875	44,962	43,970	20,893	11,718	1,237	1,692	...	...	124,472
1876 to 1880	65,357	37,382	20,083	27,585	1,715	5,161	...	...	157,283
1881 to 1885	89,071	47,694	42,788	17,933	2,695	6,926	...	...	207,107
1886 to 1890	85,310	82,468	39,049	6,010	4,377	7,186	...	...	224,400
1891 to 1895	76,723	39,534	25,335	18,756	11,134	6,076	...	...	177,558
1896 to 1900	56,964	16,697	24,964	5,816	39,097	8,727	...	...	152,265
1901 to 1905	60,729	17,847	20,512	4,253	33,761	7,301	109	...	144,512
1906 to 1910	80,687	42,639	33,828	19,157	15,221	4,499	115	...	195,916
1911	23,339	15,417	10,671	5,211	7,226	52	23	177	62,012
1861 to 1911	658,318	462,411	272,935	144,849	120,338	54,717	17	177	1,713,762

(a) Including Federal Capital Territory up to 1910. (b) Including Northern Territory up to 1900.

(c) Included in South Australia up to 1900. (d) Included in New South Wales up to 1910.

Note.—The minus sign (—) denotes decrease.

NET INCREASE OF THE POPULATION OF THE STATES, TERRITORIES
AND COMMONWEALTH FROM 1861 TO 1911.—Continued.

PERSONS.

Period.	States.						Territories.		Commonwealth.
	N.S.W. (a)	Vic.	Q'land.	S. Aust. (b)	W. Aust.	Tas.	Nor. Terr. (c)	F. C. Terr. (d)	
1861 to 1865	59,960	79,557	58,865	35,895	6,035	4,146	...	...	244,458
1866 to 1870	89,486	106,134	28,351	23,069	3,754	6,919	...	...	257,713
1871 to 1875	95,375	71,009	53,833	25,530	1,867	2,853	...	...	250,467
1876 to 1880	147,775	63,671	41,935	66,317	2,559	11,051	...	...	333,308
1881 to 1885	202,725	101,233	105,641	32,920	6,398	14,070	...	...	462,987
1886 to 1890	169,408	173,890	75,435	9,634	12,543	15,927	...	...	456,837
1891 to 1895	142,228	51,948	50,948	33,021	52,013	10,108	...	...	340,266
1896 to 1900	104,802	10,537	50,783	10,139	79,452	18,005	...	...	273,718
1901 to 1905	127,579	14,208	37,635	5,371	70,171	13,485	— 811	...	267,638
1906 to 1910	155,971	90,987	67,534	44,247	26,694	7,418	— 745	...	392,106
1911 ...	54,265	37,696	23,113	11,304	17,349	— 324	— 53	276	143,624
1861 to 1911	1,369,574	800,868	594,073	297,447	278,835	103,658	— 1,609	276	3,423,122

(a) Including Federal Capital Territory up to 1910. (b) Including Northern Territory up to 1900.

(c) Included in South Australia up to 1900. (d) Included in New South Wales up to 1910.

Note.—The minus sign (—) denotes decrease.

As regards the Commonwealth as a whole, the greatest increase in any quinquennium was that for the years 1881-5, viz., 462,987. These figures were, however, closely approached in the following quinquennium, viz., 456,837. The rate of increase fell off in succeeding quinquennia, the increase for the years 1901-5 being 267,638. Since then an improvement has set in, and the increase for the year 1911, 143,624, is the best yet experienced by the Commonwealth. The previous best for any single year viz., 117,654, was experienced in the year 1883.

As regards the individual States the maximum increases in any quinquennium are as follows:—New South Wales, 202,725, in 1881-5; Victoria, 173,890, in 1886-90; Queensland, 105,641, in 1881-5; South Australia (including the Northern Territory), 66,317, in 1876-80; Western Australia, 79,452, in 1896-1900; Tasmania, 18,005, in 1896-1900.

As regards the minimum increases, it will be seen that they have occurred as under:—New South Wales, 59,960, in 1861-5; Victoria, 10,537, in 1896-1900; Queensland, 28,351, in 1866-70; South Australia, 5371, in 1901-5; Western Australia, 1867, in 1871-5; Tasmania, 2853, in 1871-5.

For the year 1911 all the States show a satisfactory rate of increase, with the exception of Tasmania, which shewed a loss of 324. As regards the Northern Territory, the figures show a loss of population for each year since 1901.

The graphs shewing net increase, both for the Commonwealth as a whole and for each of the States, will be found on pages 178 and 179.

5. Total Increase.—(i.) *Rates for various Countries.* The table hereunder furnishes particulars concerning rates of increase in population for the Commonwealth, its component States, and other countries:—

RATES OF INCREASE IN POPULATION, 1881 to 1911 (VARIOUS COUNTRIES).

Countries.	Mean Annual Rate of Increase in Population during period—					
	1881 to 1886.	1886 to 1891.	1891 to 1896.	1896 to 1901.	1901 to 1906.	1906 to 1911.
	%	%	%	%	%	%
AUSTRALASIA—						
Commonwealth ...	3.86	3.06	1.86	1.49	1.39	2.03
New South Wales ...	4.83	3.23	1.99	1.57	2.01	2.03
Victoria ...	2.60	3.12	0.37	0.52	0.16	2.17
Queensland ...	8.42	3.80	2.49	2.25	1.36	2.76
South Australia ...	1.41	1.15	1.63	0.77	0.33	2.46
Western Australia ...	6.13	5.54	20.81	7.25	6.24	2.43
Tasmania ...	2.18	2.87	1.06	1.83	1.29	0.65
New Zealand ...	3.31	1.47	2.41	1.98	2.83	2.56
EUROPE—						
England and Wales ...	1.11	1.11	1.15	1.15	1.01	1.01
Scotland ...	0.75	0.75	1.06	1.06	0.60	0.60
Ireland ...	—0.95	—0.94	—0.60	—0.43	—0.26	—0.03
Austria ...	0.73	0.83	0.79	1.05	0.96	*0.99
Belgium ...	1.13	0.75	1.15	0.92	1.26	(a)0.64
Denmark ...	1.05	0.87	0.99	1.32	1.10	(a)1.26
Finland ...	1.42	1.51	1.20	1.41	1.31	(a)1.41
France ...	0.34	0.06	0.09	0.24	0.15	0.01
German Empire ...	0.74	1.09	1.17	1.51	1.46	(b)1.36
Hungary ...	1.09	1.01	0.92	1.03	1.01	(a)0.85
Italy ...	0.66	0.71	0.68	0.61	0.65	(a)0.89
Netherlands ...	1.32	1.03	1.28	1.30	1.53	(a)1.18
Norway ...	0.36	0.54	0.96	1.31	0.54	(a)0.60
Prussia ...	0.79	1.15	1.29	1.59	1.57	(a)1.49
Rumania ...	1.77	1.34	1.15	1.41	1.46	(a)1.41
Servia ...	2.30	2.08	1.37	1.57	1.52	(b)1.36
Spain ...	0.54	0.48	0.45	0.45	0.86	(a)0.51
Sweden ...	0.57	0.40	0.61	0.86	0.61	(a)0.85
Switzerland ...	0.38	0.40	1.22	1.10	0.96	(b)1.22
ASIA—						
Ceylon ...	0.54	1.35	1.41	2.03	2.07	(a)0.96
Japan ...	0.96	1.12	0.96	1.25	1.29	(a)1.04
AMERICA—						
Canada ...	1.10	1.08	0.97	1.19	2.80	2.80
Chile ...	2.97	0.72	2.66	0.90	0.26	(a)0.80
Jamaica ...	0.77	1.37	1.66	1.72	0.88	(a)0.88
United States... ..	2.27	2.15	1.93	2.02	1.66	(a)1.83

— Decrease. (a) 1906 to 1910. (b) 1906 to 1909.

(ii.) *Variations in the Commonwealth Rate.* During the thirty years 1881-1911, the annual rate of increase in the population of the Commonwealth has exhibited a marked decline, falling from an average of 3.86 per cent. for the five years 1881-6 to an average of 1.39 for 1901-6. During the succeeding quinquennium, however, an improvement took place, the rate of increase being 2.03 per cent. As regards the separate States of the Commonwealth, the rates of increase in all cases except that of South Australia were lower, and in most instances considerably lower, for the period 1906-11 than for 1881-6.

(iii.) *Comparison of Rates of Increase.* It may be noted that the highest rates of increase for the latest available period shewn in the above table are those for Canada, New Zealand and Australia in the order named. The United States and Prussia rank next in order.

6. **Density of Population.**—From one aspect population may be less significant in respect of its absolute amount than in respect of the density of its distribution. The Commonwealth of Australia, with an area of 2,974,581 square miles, and a population on 31st December, 1911, of 4,668,707 including aboriginals, has a density of only 1.57 persons to the square mile, and is therefore the most sparsely populated of the civilised countries of the world. For the other continents the densities are approximately as follows:—Europe, 117; Asia, 57; Africa, 12; North and Central America, 15; and South America, 7. The population of the Commonwealth has thus about $10\frac{1}{2}$ per cent. of the density of that of North and Central America, about $23\frac{1}{4}$ per cent. of South America, about 13 per cent. of that of Africa, about $2\frac{3}{4}$ per cent. of that of Asia, and about $1\frac{1}{3}$ per cent. of that of Europe.

Particulars concerning the number and density of the population of the various countries of the world for the latest dates for which such information is available are given in the following table. These figures have in the main been derived from the 1912 issue of the "Statesman's Year Book," and in some instances, more particularly in the case of Africa, must be considered as rough approximations only, complete data not being obtainable:—

NUMBER AND DENSITY OF THE POPULATION OF THE VARIOUS COUNTRIES OF THE WORLD.

Country	Population.		Country.	Population	
	Number.	Density (a)		Number.	Density (a)
Continents—			Asia—		
Europe	452,153,642	117.13	China & Dependencies ...	433,553,030	101.36
Asia	962,413,901	56.58	British India	244,267,542	222.49
Africa	136,348,471	12.17	Feudatory Indian States	70,864,995	102.52
North & Central America			Japan & Dep.(incl. Korea)	68,658,922	263.14
and the West Indies ...	127,385,483	14.91	Dutch East Indies ...	37,600,000	64.32
South America	50,049,082	6.74	Russia in Asia	24,889,000	3.81
Australasia & Polynesia	7,450,308	2.15	Turkey in Asia	17,736,900	25.57
			Persia	9,500,000	15.13
Total	1,735,800,887	33.72	Philippine Islands ...	8,276,802	64.74
			Siam	6,250,000	32.05
Europe—			Afghanistan	5,900,000	23.60
Russia (including Poland			Tonking	5,896,510	127.08
Ciscaucasia & Finland)	138,889,800	65.44	Annam	5,513,681	105.83
German Empire	64,903,423	310.87	Nepal	5,000,000	92.59
Austria - Hungary (incl.			Ceylon	4,109,054	162.21
Bosnia & Herzegovina)	51,312,877	196.52	Cochin China	2,870,514	143.53
United Kingdom	45,365,599	373.71	Arabia (Independent)	2,000,000	2.07
France	39,601,509	191.26	Bokhara	1,250,000	15.06
Italy	34,686,683	113.46	Cambodia	1,193,534	26.52
Spain	19,588,688	100.57	Federated Malay States	1,035,933	37.40
Belgium	7,516,730	660.93	Khiva	800,000	33.33
Rumania	6,966,000	137.34	Straits Settlements ...	707,523	442.20
Turkey (including Crete)	6,483,406	94.35	Borneo and Sarawak ...	700,000	9.58
Netherlands	5,945,155	470.05	Laos	663,727	6.77
Portugal	5,668,354	159.73	Oman	500,000	6.10
Sweden	5,521,943	31.94	Goa	475,513	323.70
Bulgaria & E. Roumelia	4,329,108	113.68	Hong Kong & Territory	463,456	1,144.34
Switzerland	3,741,971	234.22	Timor, etc.	300,000	40.93
Servia	2,911,701	156.12	French India	283,379	1,445.81
Denmark (incl. Iceland)	2,860,165	51.69	Cyprus	274,108	76.48
Greece	2,666,000	106.58	Bhutan	250,000	12.50
Norway	2,391,782	19.27	Kiauchau	168,896	875.11
Luxemburg	259,891	260.41	Wei-hai-wei	147,177	516.41
Montenegro	250,000	68.87	Bahrein Islands	90,000	360.00
Malta	228,442	1,952.50	Macao, etc.	63,991	15,997.79
Monaco	19,121	2,390.13	Damao and Diu	56,285	333.05
Gibraltar	19,120	9,560.00	Aden & Dependencies	46,165	5.13
San Marino	10,489	276.03	Brunei	21,718	5.43
Liechtenstein	9,854	151.60	Tientsin	17,000	944.44
Andorra	5,231	29.89	Sokotra & Kuria Muria Is.	12,000	8.68
			Labuan	6,546	218.20
Total	452,153,642	117.13	Total	962,413,901	56.58

(a) Number of persons per square mile.

NUMBER AND DENSITY OF THE POPULATION OF THE VARIOUS
COUNTRIES OF THE WORLD.—Continued.

Country.	Population.		Country.	Population.	
	Number.	Density (a)		Number.	Density (a)
Africa—			Salvador	1,070,555	148.17
Belgian Congo	15,000,000	16.49	Jamaica	831,383	197.95
Turkish Dependencies (incl. Egypt & Sudan)	13,887,359	10.03	San Domingo	673,611	37.33
German East Africa	10,032,000	26.13	Nicaragua	600,000	12.20
French Congo	10,000,000	14.95	Honduras	553,446	11.97
Northern Nigeria Prot.	9,269,000	36.15	Costa Rica	379,533	16.50
Abyssinia	8,000,000	18.50	Trinidad and Tobago	330,074	176.70
Southern Nigeria & Prot.	7,858,889	98.38	Newfoundl'd & Labrador	241,607	1.48
Union of South Africa	5,958,499	12.59	Guadeloupe and Depend.	190,273	276.56
Algeria	5,563,828	16.20	Martinique	182,024	477.75
Morocco	5,000,000	22.83	Barbados	171,982	1,036.04
Upper Senegal and Niger	4,471,031	62.10	Windward Islands	164,150	311.45
Angola	4,119,000	8.50	Leeward Islands	127,189	181.44
British East Africa Prot.	4,038,000	19.99	Alaska	64,356	0.11
Uganda Protectorate	3,503,564	15.68	Bahamas	55,944	12.71
Portuguese East Africa	3,120,000	10.63	Curaçao	52,741	130.87
Madagascar & adjacent Islands	3,054,658	13.40	British Honduras	40,458	4.71
Kamerun	2,903,200	12.05	Danish West Indies	27,086	196.28
Tunis	1,923,217	38.46	Bermudas	18,994	999.68
Liberia	1,800,000	45.00	Greenland	11,893	0.25
Rhodesia	1,593,559	3.63	Turks & Caicos Islands...	5,615	33.83
Gold Coast and Protect.	1,502,899	18.79	St. Pierre & Miquelon	4,768	51.27
French Guinea	1,498,000	15.77			
Sierra Leone and Protect.	1,389,012	43.92	Total	127,385,483	14.91
Senegal	1,172,096	15.84			
Ivory Coast	1,132,812	8.71	South America—		
Togoland	1,000,372	29.68	Brazil	21,531,100	6.54
Tripoli and Benghazi	1,000,000	2.51	Argentine Republic	7,171,910	6.31
Nyasaland Protectorate	970,247	22.25	Peru	4,500,000	6.47
Dahomey	825,950	12.71	Colombia	4,320,000	9.85
Portuguese Guinea	820,000	58.82	Chile	3,329,090	11.38
French Sahara	800,000	0.52	Venezuela	2,713,703	6.89
Eritrea	450,000	9.83	Bolivia	2,267,935	3.73
Basutoland	405,601	34.62	Ecuador	1,500,000	12.93
Italian Somaliland	400,000	2.67	Uruguay	1,112,000	15.40
Mauritius and Depend.	374,625	440.74	Paraguay	752,000	4.39
British Somaliland	300,000	4.41	Panama	419,029	12.94
Mauretania	223,000	0.65	British Guiana	296,000	3.28
French Somali Coast, etc.	208,000	35.92	Dutch Guiana	85,094	1.85
Rio Muni & C. San Juan	200,000	16.67	French Guiana	49,009	1.61
Zanzibar	197,130	193.26	Falkland Islands and South Georgia	2,272	0.30
Reunion	173,822	180.13			
Cape Verde Islands	147,424	99.61	Total	50,049,082	6.74
Gambia & Protectorate	138,400	30.76			
Bechuanaland Protect.	125,350	0.46	Australasia & Polynesia—		
Swaziland	99,959	15.29	O'wealth of Australia	(b) 4,668,707	1.57
Comoro Islands	86,000	138.71	New Zealand	(c) 1,070,900	10.22
German S. W. Africa	83,900	0.26	Kaiser Wilhelm Land & Bismarck Archipelago	490,558	5.45
Prince's & St. Thomas Is.	42,103	116.95	Papua	272,057	3.00
Seychelles	26,000	162.50	Dutch New Guinea	200,000	1.32
Fernando Po, etc.	23,544	29.29	Hawaii	191,905	29.76
Rio de Oro and Adrar	12,000	0.16	Solomon Islands (British)	150,310	10.16
Spanish N. & W. Africa	10,412	800.92	Fiji	139,541	18.77
Mayotte	9,989	71.35	New Caledonia & Depend.	87,600	6.74
St. Helena	3,520	74.89	New Hebrides	50,000	10.00
Ascension	400	11.76	Samoa (German)	34,480	34.48
			French Estab. in Oceania	30,563	20.11
Total	136,348,471	12.17	Gilbert Islands	29,475	177.56
			Tonga	23,737	60.86
North & Central America & West Indies—			German Solomon Is., etc.	20,600	3.99
United States	91,972,266	30.93	Guan	12,240	61.20
Mexico	15,063,207	19.64	Samoa (American)	6,668	84.41
Canada	7,192,338	1.93	Norfolk Island	967	96.70
Cuba	2,220,278	50.27			
Haiti	2,029,700	198.91	Total	7,450,308	2.15
Guatemala	1,992,000	41.25			
Porto Rico	1,118,012	310.04			

(a) Number of persons per square mile. (b) Inclusive of an allowance of 100,000 for Aboriginal Natives. (c) Inclusive of Maoris and population of Cook and other Pacific Islands.

§ 7. Seasonal Variations of Population.

1. **Natural Increase.**—For the Commonwealth as a whole the natural increase of the population is greatest in the quarter ending 30th September, and least in that ending 31st March. The birth rate is usually at its highest, and the death rate at its lowest, in the September quarter, and *vice versa* in the March quarter. The average natural increase in population of the several States for each of the quarters, based upon the experience of the ten years 1902 to 1911, is given in the following table, from which it will be seen that the quarter in which the rate of natural increase is highest is that ended 30th June for Victoria, that ended 30th September for New South Wales, Queensland and Western Australia, that ended 31st December for Tasmania, while for South Australia the rate for the quarters ending 30th June and 30th September was almost identical. The rate of natural increase is lowest in the quarter ended 31st March in all the States except Western Australia, in which the lowest rate occurs in the quarter ended 31st December.

AVERAGE QUARTERLY NATURAL INCREASE, STATES & COMMONWEALTH, 1902 to 1911.

State.	(a) Average Natural Increase for Quarter ended on last day of—								Average Natural In- crease per annum, 1902-11.	
	March.		June.		September.		December.			
	Persons	o/oo	Persons	o/oo	Persons	o/oo	Persons	o/oo	Persons	o/oo
New S. Wales (b)	6,019	3.99	6,340	4.19	6,650	4.37	6,423	4.19	25,432	16.88
Victoria ...	3,709	3.01	4,164	3.37	4,112	3.33	3,860	3.12	15,845	12.86
Queensland ...	2,056	3.80	2,342	4.31	2,354	4.28	2,163	3.91	8,915	16.47
S. Australia (c)	1,243	3.31	1,495	3.97	1,510	4.01	1,314	3.48	5,562	14.79
W. Australia ...	1,049	4.31	1,142	4.64	1,354	5.42	1,039	4.11	4,584	18.85
Tasmania ...	778	4.18	821	4.43	840	4.57	921	4.99	3,360	18.04
Commonwealth	14,854	3.64	16,304	3.98	16,820	4.08	15,720	3.80	63,698	15.59

(a) The symbol o/oo denotes "per thousand." (b) Including Federal Capital Territory.

(c) Including Northern Territory.

2. **Net Immigration.**—For the Commonwealth as a whole the excess of arrivals over departures for the years 1902 to 1911 was greatest in the December quarter, while in the March quarter the average excess of departures over arrivals was 77. In New South Wales the September quarter gives the greatest excess of arrivals over departures. In Western Australia the largest excess is in the June quarter. In South Australia and Tasmania the arrivals largely exceeded the departures in the December quarter, but in all the other quarters the departures were in excess. In Queensland, the December quarter showed an excess of departures over arrivals. Victoria shows an excess of departures for the first three quarters. Particulars concerning the average net immigration of the several States are as follows:—

AVERAGE QUARTERLY NET IMMIGRATION, STATES & COMMONWEALTH, 1902 to 1911.

State.	Quarter ended on last day of—								Average Net Immigration per annum, 1902-11.	
	March.		June.		September.		December.			
	Persons	o/oo	Persons	o/oo	Persons	o/oo	Persons	o/oo	Persons	o/oo
N.S.W. <i>a</i>	1,675	1.11	1,087	0.72	2,955	1.94	1,146	0.75	6,862	4.55
Victoria	—1,571	—1.28	—3,318	—2.69	—471	—0.38	2,435	1.97	—2,924	—2.37
Q'land	530	0.98	3,784	6.96	787	1.43	—2,475	—4.48	2,626	4.85
S. Aust. <i>b</i>	—1,092	—2.90	—1,175	—3.12	—6	—0.01	2,453	6.49	180	0.48
W. Aust.	2,085	8.57	2,591	10.52	1,808	5.23	—510	—2.02	5,474	22.51
Tas. ...	—1,704	—9.15	—2,235	—12.06	—386	—2.10	2,790	15.13	—1,535	—8.24
C'wealth	—77	—0.02	734	0.18	4,187	1.02	5,839	1.41	10,683	2.61

Throughout, the minus sign (—) denotes that the departures were in excess of arrivals, and o/oo denotes per thousand of population.

(a) Including Federal Capital Territory. (b) Including Northern Territory.

§ 8. Urban Population.

1. **The Metropolitan Towns.**—A feature of the distribution of population in Australia is the tendency to accumulate in the capital cities. To such an extent is this metropolitan aggregation carried, that in every State the population of the capital far outnumbers that of any other town therein, and ranges between 21 and 46 per cent. of the entire population of the State. The estimated populations of the several capitals on 31st December, 1911, and the percentages of such populations on the totals for the respective States, are shewn in the table hereunder. That this metropolitan concentration is phenomenal, may be readily seen by comparing the percentage on the total population with the similar figures for the principal countries of Europe, also given in the table hereunder:—

METROPOLITAN POPULATION.

(VARIOUS COUNTRIES.)

State or Country.	Metropolis.	Year.	Population.	Percentage on total of State or Country.
				%
New South Wales	Sydney	31st Dec., 1911.	651,800	38.97
Victoria	Melbourne		600,200	44.04
Queensland	Brisbane		143,500	23.07
South Australia	Adelaide		192,400	46.01
Western Australia	Perth		111,400	37.86
Tasmania	Hobart		40,200	20.78
Commonwealth	(6 Cities)		1,739,500	38.12
New Zealand	Wellington		71,400	6.96
Denmark	Copenhagen	1911	559,398	20.29
England	London (a)	1911	4,522,961	12.54
Saxony	Dresden	1910	548,308	11.41
Norway	Christiania	1910	241,834	10.11
Ireland	Dublin	1911	403,030	9.20
Belgium	Brussels	1910	665,806	8.86
Bavaria	Munich	1910	596,467	8.66
France	Paris	1911	2,888,110	7.29
Austria	Vienna	1910	2,031,498	7.11
Scotland	Edinburgh	1911	320,315	6.73
Portugal	Lisbon	1900	356,009	6.56
Greece	Athens	1907	167,479	6.36
Sweden	Stockholm	1910	341,986	6.19
Prussia	Berlin	1910	2,070,695	5.16
Netherlands	The Hague	1910	280,515	4.72
Hungary	Budapest	1910	880,371	4.22
Spain	Madrid	1910	571,539	2.93
Switzerland	Berne	1910	85,264	2.28
Italy	Rome	1911	538,634	1.55
Russia (European)	St. Petersburg	1909	1,907,708	1.61

(a) Population of Greater London 1911, 7,252,963.

2. **Urban Population Generally.**—In connection with the particulars shewing the tendency in Australia to concentrate population in the metropolis, it should be borne in mind that in most of the European States the capital is but one of many populous cities, and in some instances is by no means the most populous. In Australia, on the other hand, the metropolis is in every instance the most populous city, and, in some of the States, is also the only town of considerable magnitude.

In the following table will be found particulars of all localities in the Commonwealth returned at the date of the Census, on 3rd April, 1911, as having a population of over 3000. From this it will be seen that there were, in all, 29 localities in the Commonwealth returned as having a population upwards of 20,000. Of these 11 were in New South Wales, 13 in Victoria, 1 in Queensland, 1 in South Australia, 1 in Western Australia and 2 in Tasmania.

The figures given in this table relate to the localities specified as defined by the residents therein. It must be understood that no clearly defined boundaries exist in these cases, and the population given for any locality represents the number of persons who returned themselves as belonging to that locality. For the population within the boundaries of the principal Local Government Areas in the States, reference should be made to paragraph 3 below.

POPULATION OF PRINCIPAL TOWNS IN THE COMMONWEALTH, 3rd APRIL, 1911.

Town.	State in which Situated.	Approx. Population.	Town.	State in which Situated.	Approx. Population.
100,000 and over—			10,000 and under 20,000—cont.		
Sydney	N.S.W.	107,133	Toowoomba	Qld.	16,161
20,000 and under 100,000—			Townsville	"	13,678
Adelaide	S.A.	32,981	Waverley	N.S.W.	18,961
Ballarat	Vic.	38,686	Williamstown	Vic.	12,114
Balmain	N.S.W.	31,961	Woollahra	N.S.W.	12,816
Brisbane South	Qld.	21,332	5000 and under 10,000—		
Broken Hill	N.S.W.	30,953	Abbotsford	Vic.	9,308
Brunswick	Vic.	32,201	Adelaide North	S.A.	9,300
Carlton	"	27,476	Albury	N.S.W.	5,862
Collingwood	"	20,254	Alexandria	"	9,491
Fitzroy	"	34,141	Ararat	Vic.	5,402
Footscray	"	21,933	Armadale	"	6,530
Geelong	"	21,630	Arncliffe	N.S.W.	5,034
Glebe	N.S.W.	21,444	Ascot Vale	Vic.	5,655
Hawthorn	Vic.	24,353	Auburn	N.S.W.	5,602
Hobart	Tas.	27,505	Bathurst	"	9,219
Lannceton	"	20,937	Bexley	"	6,241
Leichhardt	N.S.W.	24,139	Bundaberg	Qld.	8,727
Marrickville	"	25,993	Burwood	N.S.W.	8,281
Melbourne	Vic.	38,293	Cairns	Qld.	5,198
Melbourne South	"	46,016	Camberwell	Vic.	8,547
Newtown	N.S.W.	26,427	Castlemaine	"	5,219
Paddington	"	24,150	Caulfield	"	7,669
Perth	W.A.	31,300	Chatswood	N.S.W.	5,482
Petersham	N.S.W.	20,407	Claremont	W.A.	6,252
Prahran	Vic.	25,489	Coburg	Vic.	9,454
Redfern	N.S.W.	24,275	Cottesloe	W.A.	5,142
Richmond	Vic.	38,559	Drummoyne	N.S.W.	5,947
St. Kilda	"	25,449	Dubbo	"	5,868
Sydney North	N.S.W.	32,764	Eaglehawk	Vic.	6,998
10,000 and under 20,000—			Elsternwick	"	6,790
Annandale	N.S.W.	11,250	Ersleville	N.S.W.	7,234
Ashfield	"	12,096	Flemington	Vic.	6,109
Bendigo	Vic.	17,883	Fortitude Valley	Qld.	7,090
Botany	N.S.W.	10,228	Fremantle	W.A.	6,406
Boulder	W.A.	12,833	Fremantle South	"	6,253
Brighton	Vic.	11,096	Glennelg	S.A.	5,003
Brisbane	Qld.	17,715	Grafton and Grafton South	N.S.W.	6,123
Charters Towers	"	15,037	Granville	"	6,938
Essendon	Vic.	10,087	Hamilton	"	6,944
Goulburn	N.S.W.	10,187	Hurstville	N.S.W.	5,551
Gympie	Qld.	11,718	Inverell	"	5,112
Ipswich	"	10,445	Kensington	Vic.	7,341
Kalgoorlie	W.A.	13,488	Kogarah	N.S.W.	6,300
Kew	Vic.	11,143	Leederville	W.A.	5,499
Malvern	"	15,319	Lismore	N.S.W.	7,609
Manly	N.S.W.	10,687	Lithgow	"	6,991
Melbourne North	Vic.	17,750	Mackay	Qld.	6,135
Mosman	N.S.W.	13,189	Maitland West	N.S.W.	7,395
Newcastle	"	12,816	Maryborough	Qld.	9,410
Northcote	Vic.	17,491	"	Vic.	5,804
Parramatta	N.S.W.	12,520	Moonee Ponds	"	8,065
Port Melbourne	Vic.	13,471	Mount Morgan	Qld.	9,772
Randwick	N.S.W.	15,793	New Farm	"	5,394
Rockhampton	Qld.	15,451	Newtown	Vic.	5,863
South Yarra	Vic.	10,060	Norwood	S.A.	9,454

POPULATION OF PRINCIPAL TOWNS IN THE COMMONWEALTH,

3RD APRIL, 1911—Continued.

Town.	State in which Situated.	Approx. Population.	Town.	State in which Situated.	Approx. Population.
5000 and under 10,000—cont.			3000 and under 5000—cont.		
Orange	N.S.W.	5,263	Gunnedah	N.S.W.	4,100
Paddington	Qld.	5,273	Hamilton	Qld.	3,929
Parkside	S.A.	7,774	Hindmarsh	S.A.	3,556
Port Pirie	"	7,968	Horsham	Vic.	3,554
Preston	Vic.	5,025	Ithaca	Qld.	3,378
Rockdale	N.S.W.	7,453	Junea	N.S.W.	3,606
Rookwood	"	5,374	Kangaroo Point	Qld.	4,417
St. Peters	"	7,037	Katoomba	N.S.W.	3,950
Subiaco	W.A.	8,701	Kensington	S.A.	4,175
Tamworth	N.S.W.	7,607	Kuri-Kuri	N.S.W.	4,154
Toowong	Qld.	5,645	Kyneton	Vic.	3,174
Wagga Wagga	N.S.W.	7,416	Liverpool	N.S.W.	3,081
Wallerawang	S.A.	5,282	Maldon	Vic.	2,077
Warrnambool	Vic.	7,543	Merewether	N.S.W.	4,135
Warwick	Qld.	5,562	Midland Junction	W.A.	3,881
Waterloo	N.S.W.	9,471	Mildura	Vic.	4,608
Woolloongabba	Qld.	8,325	Moonta	S.A.	3,772
3000 and under 5000—			Moree	N.S.W.	3,161
Albany	W.A.	3,699	Mount Gambier	S.A.	4,531
Armadale	Vic.	4,298	Mudgee	N.S.W.	3,621
Bairnsdale	"	3,412	Narrabri	"	4,686
Beechworth	"	3,409	Newtown	Tas.	3,382
Benalla	"	3,172	Northam	W.A.	4,205
Bunbury	W.A.	3,920	Oakleigh	Vic.	3,341
Camperdown	N.S.W.	4,768	Parke	N.S.W.	3,411
Campsie	Vic.	3,473	Perth North	W.A.	4,695
Canterbury	N.S.W.	3,957	Perth West	"	3,291
Casino	"	4,190	Port Adelaide	S.A.	3,386
Cessnock	"	3,635	Prospect	"	3,998
Clifton Hill	Vic.	3,957	Queenstown	Tas.	3,659
Cobar	N.S.W.	4,023	Roma	Qld.	3,157
Colac	Vic.	3,992	Ryde	N.S.W.	3,247
Concord	N.S.W.	4,619	St. Arnaud	Vic.	4,196
Coonamble	"	3,992	Sale	"	3,491
Cootamundra	"	3,799	Semaphore	S.A.	3,495
Cowra	"	3,280	Shepparton	Vic.	4,049
Darlington	"	3,352	Singleton	N.S.W.	3,655
Daylesford	"	3,981	Stawell	Vic.	4,843
Devonport	Vic.	3,815	Strathfield	N.S.W.	3,193
Dulwich Hill	Tas.	3,928	Summer Hill	"	3,854
Echuca	N.S.W.	3,620	Temora	"	3,561
Enfield	Vic.	3,578	Toorak	Vic.	3,630
Forbes	N.S.W.	4,137	Unley	S.A.	4,397
Fremantle East	"	3,475	Wangaratta	Vic.	4,136
Gawler	W.A.	4,654	Waratah	N.S.W.	3,597
Geraldton	"	3,856	Wellington	"	4,409
Glen Innes	S.A.	3,315	Willoughby	"	4,693
Goodwood	S.A.	4,037	Windsor	Vic.	3,953
Grenfell	W.A.	3,494	Wollongong	N.S.W.	4,725
Guildford	N.S.W.	4,030	Wonthaggi	Vic.	3,223
	W.A.	3,443	Wyalong	N.S.W.	3,301
		3,007	Young	"	3,619
		3,224	Zeehan	Tas.	3,951

3. Municipal Population.—In the following table the population of the Local Government Areas in the several States will be found set out. It includes only those areas having upwards of 5000 in population.

By the term "Local Government Areas" is meant those districts which have been incorporated for Municipal purposes, and are variously known in the several States as Cities, Towns, Boroughs, Shires, Municipalities, Corporations, District Councils and Road Districts.

**POPULATION OF PRINCIPAL LOCAL GOVERNMENT AREAS IN THE
COMMONWEALTH, 3rd APRIL, 1911.**

Local Government Area.	State in which Situated.	Approx. Population.	Local Government Area.	State in which Situated.	Approx. Population.
100,000 and upwards—			5000 and under 10,000—		
Sydney	N.S.W.	112,921	Alberton	Vic.	5,479
Melbourne	Vic.	108,593	Albury	N.S.W.	6,309
20,000 and under 100,000—			Ararat (Shire)	Vic.	6,335
Adelaide	S.A.	42,294	Auburn	N.S.W.	5,559
Ashfield	N.S.W.	20,431	Bairnsdale	Vic.	8,190
Ballarat (City)	Vic.	22,017	Bathurst	N.S.W.	8,575
Balmain	N.S.W.	32,038	Beechworth	Vic.	5,978
Bendigo	Vic.	28,539	Bellingen	N.S.W.	9,124
Brisbane	Qld.	35,491	Benalla	Vic.	7,688
Brisbane, South		34,478	Berwick		6,632
Broken Hill	N.S.W.	30,972	Bexley	N.S.W.	6,517
Brunswick	Vic.	32,215	Bland	"	5,522
Cessnock	N.S.W.	21,018	Blaxland	"	9,661
Collingwood	Vic.	34,190	Blue Mountains	"	6,902
Essendon	"	23,749	Boree	"	5,111
Fitzroy	"	34,283	Borong	Vic.	5,412
Footscray	"	23,643	Botany, North	N.S.W.	5,836
Glebe	N.S.W.	21,943	Bright	Vic.	5,943
Hawthorn	Vic.	24,450	Bundaberg	Qld.	5,516
Hobart	Tas.	27,526	Buninyong (Shire)	Vic.	5,594
Launceston		20,754	Burnside	S.A.	9,416
Leichardt	N.S.W.	24,254	Burwood	N.S.W.	9,280
Marrickville	Vic.	30,653	Byron		6,553
Melbourne, South	Vic.	46,190	Caboolture	Qld.	5,759
Newtown	N.S.W.	26,498	Cairns (Town)		5,164
Paddington		24,317	Canoblas	N.S.W.	5,140
Perth (Municipality)	W.A.	35,767	Castlemaine	Vic.	5,223
Petersham	N.S.W.	21,712	Clifton	Qld.	7,099
Port Adelaide	S.A.	24,015	Coburg	Vic.	9,505
Prahran	Vic.	45,367	Coolamon	N.S.W.	5,600
Redfern	N.S.W.	24,427	Crookwell		6,223
Richmond	Vic.	40,442	Dandenong	Vic.	5,134
St. Kilda		25,334	Deloraine	Tas.	5,779
Sydney, North	N.S.W.	34,846	Dimboola	Vic.	5,796
Unley	S.A.	23,773	Dorrigo	N.S.W.	7,984
10,000 and under 20,000—			Drummoyne		8,678
Alexandria	N.S.W.	10,123	Eaglehawk	Vic.	7,588
Annapdale		11,240	Erina	N.S.W.	9,176
Ballarat, East	Vic.	15,962	Erskineville		7,299
Boulder	W.A.	10,824	Esak	Qld.	5,575
Brighton	Vic.	12,063	Euroa	Vic.	5,130
Bulli	N.S.W.	10,123	Glengallan	Qld.	5,982
Camberwell	Vic.	12,551	Gobang	N.S.W.	5,326
Canterbury	N.S.W.	11,331	Goolman	Qld.	5,289
Caulfield	Vic.	15,919	Granville	N.S.W.	7,231
Colac	A.	14,212	Guymra		6,534
Fremantle (Municipality)	W.A.	14,499	Gympie	Qld.	8,923
Geelong	Vic.	13,618	Hamilton	N.S.W.	7,908
Goulburn	N.S.W.	10,023	Hampden	Vic.	9,829
Hindmarsh	S.A.	11,395	Hastings	N.S.W.	5,746
Ithaca	Qld.	15,756	Heidelberg	Vic.	8,610
Kalgoorlie (Road District)	W.A.	12,061	Highfields	Qld.	5,656
Kensington and Norwood	S.A.	13,892	Hornsby	N.S.W.	8,901
Kew	Vic.	11,152	Hunter's Hill		5,013
Lake Macquarie	N.S.W.	14,610	Hurstville	N.S.W.	6,538
Malvern	Vic.	15,969	Illawarra, Central		5,000
Manly	N.S.W.	10,465	Illawarra, North		5,157
Manning		11,137	Imlay	"	5,564
Moorabbin	Vic.	12,757	Ipswich	Qld.	9,528
Mosman	N.S.W.	13,243	Jondaryan		7,469
Newcastle		11,610	Kadina (District Council)	S.A.	8,006
Northcote	Vic.	17,519	Kalgoorlie (Municipality)	W.A.	8,781
Parramatta	N.S.W.	12,465	Karkaroc	Vic.	5,743
Port Melbourne	Vic.	13,515	Kentish	Tas.	5,571
Queenton	Qld.	14,277	Kerang	Vic.	8,969
Randwick	N.S.W.	19,463	Kogarah	N.S.W.	6,953
Rockdale		14,095	Korong	Vic.	5,517
Rockhampton	Qld.	15,456	Ku-ring-gai	N.S.W.	9,458
Toowoomba		13,119	Kyneton	Vic.	6,904
Townsville		10,636	Leederville	W.A.	5,457
Waterloo	N.S.W.	10,072	Leven	Tas.	5,450
Waverley		19,831	Lilydale	Vic.	6,329
Williamstown	Vic.	15,275	Lismore	N.S.W.	7,381
Willoughby	N.S.W.	13,036	Lithgow		8,106
Woollahra	"	16,989	Liverpool Plains	"	5,651

POPULATION OF PRINCIPAL LOCAL GOVERNMENT AREAS IN THE COMMONWEALTH, 3rd APRIL, 1911.—Continued.

Local Government Area.	State in which Situated.	Approx. Population.	Local Government Area.	State in which Situated.	Approx. Population.
5000 and under 10,000—cont.			5000 and under 10,000—cont.		
Livingstone	Qld.	5,656	St. Peters	N.S.W.	8,410
Lyndhurst	N.S.W.	6,740	... ..	S.A.	9,073
Mackay	Qld.	5,141	Severn	N.S.W.	6,885
Macleay	N.S.W.	6,679	Shepparton	Vic.	6,069
Maitland, West	"	8,210	Stephens	Qld.	5,415
Marong	Vic.	6,646	Stroud	N.S.W.	5,117
Maroochy	Qld.	5,288	Subiaco	W.A.	8,926
Maryborough	Vic.	5,675	Swan Hill	Vic.	6,795
... ..	Qld.	9,673	Tamworth	N.S.W.	7,145
Mildura	Vic.	6,119	Tarampa	Qld.	6,699
Mitcham	S.A.	5,035	Tarro	N.S.W.	6,492
Mount Morgan	Qld.	8,504	Tenterfield (Shire)	"	5,153
Mulwara	N.S.W.	7,009	Tarania	"	5,621
Namoi	"	8,092	Thebarton	S.A.	8,720
Nanango	Qld.	6,433	Thuringowa	Qld.	5,035
Narracan	Vic.	5,408	Tintenbar	N.S.W.	5,865
New Norfolk	Tas.	6,124	Toombul	Qld.	6,791
Newtown and Chilwell	Vic.	5,831	Toowong	"	6,285
Numurkah	"	6,944	Tuwong	Vic.	6,418
Nunawading	"	7,120	Tungamah	"	5,376
Patrick's Plains	N.S.W.	6,894	Tweed	N.S.W.	7,308
Perth (Road District)	W.A.	5,066	Wagga Wagga	"	6,419
Phillip Island & Woolamai	Vic.	7,067	Wallerobba	"	5,619
Pioneer	Qld.	9,752	Wambo	Qld.	6,749
Poowong and Jeetho	Vic.	7,449	Waranga	Vic.	5,291
Port Germein	S.A.	5,310	Warrnambool (Shire)	"	8,653
Portland (Shire)	Vic.	5,291	Warrnambool (Town)	"	7,010
Port Pirie	S.A.	9,385	Warwick	Qld.	5,248
Preston	Vic.	5,049	Wangoola	N.S.W.	5,262
Prospect	S.A.	6,813	Wickham	"	8,434
Rodney	Vic.	6,718	Windsor	Qld.	8,970
Rookwood	N.S.W.	5,418	Woodville	S.A.	7,787
Rosalie	Qld.	7,982	Zeehan	Tas.	5,726
Ryde	N.S.W.	5,281			

§ 9. Assisted Immigration.

In the earlier days of settlement in Australia, State-assisted immigration played an important part. Such assistance practically ceased in Tasmania in 1891, and for the time being, in Victoria in 1873, and in South Australia in 1886. In New South Wales general State-aided immigration was discontinued in the year 1887, but those who arrived under that system and were still residing in New South Wales might, under special regulations, send for their wives and families. A certain amount of passage money, graduated according to the age of the immigrant, was required to be paid in each case. Under the provisions of these regulations, immigrants to the number of 1994 received State assistance during the years 1888 to 1899 inclusive. From 1900 to 1905 no assistance of any kind was given, but from 1906 onwards assistance has again been afforded. In Queensland and Western Australia, such assistance, although varying considerably in volume from year to year, has been accorded for many years past. Assistance to immigrants, which in the case of Victoria, had practically ceased in 1873, has recently been again afforded; and in South Australia the principle of State assistance was again introduced in 1911.

The number of assisted immigrants for the year 1911, and also the total from the earliest times up to the end of 1911, is given in following table:—

ASSISTED IMMIGRANTS DURING 1911 AND UP TO END OF 1911.

STATES AND COMMONWEALTH.

State	N.S.W.	Victoria.	Qld.	S. Aust.	W.A.	Tas.	C'wlth.
No. Assisted during 1911	9,922	6,772	12,396	665	9,562	...	39,317
No. of Assisted Immigrants	237,681	149,703	196,263	96,013	24,624	21,699	725,983

§ 10. Enumerations and Estimates.

1. **Musters.**—Actual enumerations of Australia's population, of varying accuracy have been made from the earliest times onward. Originally known as "Musters," these were first undertaken with a view to estimating the food and other requirements of the settlements. These musters, the results of which are said to have been very unreliable, appear to have been carried out at least annually from 1788 to 1825, when they were discontinued.

2. **Census-taking.**—The first regular Census in Australia was that of New South Wales, in November, 1828. The dates on which Censuses have been taken in the several States, and the populations enumerated thereat, are as shewn in the table on the next page.

3. **The Census of 1901.**—A conference of the State Statisticians of Australia and New Zealand held in Sydney in February and March, 1900, aimed at securing uniformity in the collection and compilation of the Census of 1901. The householder's schedule which it drafted made provision for the collection of information in all the States under the following heads, viz.:—Name, Sex, Age, Conjugal Condition, Relation to Head of Household, Occupation, Sickness and Infirmary, Birthplace, Length of Residence in Colony, Religion, Education, Materials of Houses and Number of Rooms. In addition to these, it was agreed that States so desiring might include further inquiries relating to Land, Live Stock, Crops, and certain other matters.

Provision was made for uniformity in the classification and compilation of the data by formulating rules for dealing with cases in which differences of opinion as to methods of treatment might exist. Thus, although conducted by six different States, the Census of the Commonwealth, as taken in 1901, was carried out on a fairly uniform plan, and consequently furnished data in many ways suitable for purposes of aggregation or comparison. A detailed examination of the results, however, gives many indications of departure from a common line of action, which, in the absence of a central authority, can hardly be avoided in an undertaking of this nature.

4. **The Census of 1911.**—Under Section 51, sub-section (xi.) of the Constitution Act, power is given to the Parliament of the Commonwealth to make laws with respect to "Census and Statistics." This power was brought into requisition in 1905, when the Census and Statistics Act of 1905 became law, being assented to on 8th December, 1905. Under this Act provision is made for the appointment of a Commonwealth Statistician, and amongst other duties that officer is charged with the taking of a Census in the year 1911 and in every tenth year thereafter.

The particulars which the Act requires to be included in the Census schedule are almost identical with those which were contained in the 1901 schedule, the principal alterations being that "Length of Residence in Australia" is specified instead of "Length of Residence in the Colony of Enumeration," that "Duration of Marriage" was to be asked in all cases, and that nationality was to be ascertained in addition to birthplace. As already stated in § 1 of the present section, the Census was taken as at 3rd April, 1911.

In each State a Census supervisor was appointed to control the collection within that State under the direction of the Commonwealth Statistician. Each State was then divided into Census districts, each of which was placed in the charge of an enumerator, and each Census district was further subdivided into collectors' districts, one collector for each district.

It should be noted, in connection with the Census of 1911, that a slight change in defining the date of reference has been made in order to accord with the English practice. In previous Australian censuses the date of the census has been taken to be that of the day preceding the midnight which is adopted as the determining point. Thus, at the census of 1901, where the figures given relate approximately to midnight between the 31st March and the 1st April, the Australian census was stated to be that of the 31st March, while in a precisely similar case in England it was stated to be that of 1st April.

At the census of 1911, taken as at midnight between the 2nd and 3rd April, the date of the census has, in accordance with the English practice, been stated to be the 3rd April, and that day was gazetted as the day of the census.

The total population enumerated at the several Australian Censuses are shown in the following table:—

AUSTRALIAN CENSUSES.

Census Year.	Population Enumerated (exclusive of Aborigines).						
	New South Wales.	Victoria.	Queensland	South Australia.	Western Australia.	Tasmania.	Commonwealth. (Total)
1828	(Nov.) 36,598	...	...	...	...	...	...
1833	(2nd Sept.) 60,794	...	...	...	...	...	...
1836	(2nd Sept.) 77,096	...	...	...	...	...	...
1841	(2nd March) 130,856	...	...	...	...	(27th Sept.) 50,216	...
1844	...	...	...	(26th Feb.) 17,366	...	...	...
1846	(2nd March) 189,609	...	...	(26th Feb.) 22,890	...	...	...
1847	...	...	...	...	...	(31st Dec.) 70,164	...
1848	...	...	...	...	(10th Oct.) 4,622	...	...
1851	(1st Mar.) (a) 268,344	...	...	(1st Jan.) 63,700	...	(1st Mar.) 70,130	...
1854	...	(26th Apr.) (b) 234,298	...	...	(30th Sept.) 11,743	...	...
1855	...	...	...	(31st Mar.) 85,821	...	...	...
1856	(1st March) 269,722	...	...	...	...	...	...
1857	...	(29th Mar.) 408,998	...	...	...	(31st Mar.) 81,492	...
1859	...	...	...	...	(31st Dec.) 14,837	...	...
1861	(7th April) 350,860	(7th April) 538,628	(7th April) (b) 30,059	(7th April) 126,830	...	(7th April) 89,977	...
1864	...	...	(1st Jan.) 61,467	...	...	...	...
1866	...	...	...	(26th Mar.) 163,452	...	...	...
1868	...	...	(2nd Mar.) 99,901	...	...	...	...
1870	...	...	...	...	(31st Mar.) 24,785	(7th Feb.) 99,328	...
1871	(2nd April) 502,998	(2nd April) 730,198	(1st Sept.) 120,104	(2nd April) 185,626	...	...	...
1876	...	...	(1st May) 173,283	(26th Mar.) 213,271	...	...	...
1881(c)	749,825	861,566	213,525	279,865	29,708	115,705	2,250,194
1886	...	...	(1st May) 322,853	...	...	...	...
1891(d)	1,123,954	1,139,840	393,718	320,431	49,782	146,667	3,174,392
1901(e)	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801
1911(f)	1,646,734	1,315,551	605,813	408,558	282,114	191,211	4,455,005
	(g) 1,714			(h) 3,310			

(a) Including Port Phillip District, which afterwards became the Colony of Victoria. (b) Previously included with New South Wales. (c) 3rd April. (d) 5th April. (e) 31st March. (f) 3rd April. (g) Federal Capital Territory, previously included with New South Wales. (h) Northern Territory, previously included with South Australia.

5. Estimates of Population.—In the absence of an annual enumeration of the population, it becomes necessary to adopt some method of estimating it for intercensal periods, basing such estimates on the results of the most recent Censuses. The manner in which

this is effected varies, however, in different parts of the world. In England, for example, the assumption made is that the rate of increase of the preceding intercensal period will continue unchanged during the current period. Again, in the United States, it has been assumed, in certain cases, that the numerical increase per annum ascertained for the preceding intercensal period will hold good for the current period. From the earliest times in Australia, "statistics of fluctuation" have been obtained from the records of births, deaths, arrivals and departures. With reasonable thoroughness in the collection of such statistics, the deduced estimates possess much greater weight than those based on the mere assumption of a continuation of the increase experienced in the preceding period. In most cases, however, estimates of population, based on statistics of fluctuation, are found to be in excess at the Census, thus indicating a uniform tendency to over-estimation, and the necessity for a correction. In the population figures given in the earlier portion of the present section, the estimates of the population of the several States have been carefully revised, the results of the various Censuses being taken in conjunction with the records of births, deaths, arrivals and departures. It is believed that by this means the population of the Commonwealth from the date of settlement onwards has been obtained with a high degree of accuracy, and that the figures supplied represent a reasonably close approximation to the actual numbers. A detailed account of the adjustment for the decennium 1901-10 will be found in § 3 of the present section. Particulars for the several States from the date of settlement onwards are given in the following tables, and are shewn by graphs on pages 175 to 177:—

COMMONWEALTH POPULATION FROM EARLIEST DATE.

MALES.

Year.	Estimated Population at end of Year.								
	N. South Wales.	Victoria.	Queens- land.	South Australia.	Western Australia.	Tas- mania.	Nor. Ter'try.	Fd. Cp. Ter'try.	Common- wealth.
1788	...	...	...	...	...	...	...	...	*
1790	...	...	...	...	...	...	...	...	*
1795	...	...	...	...	...	...	...	...	*
1800	3,780	...	...	...	...	...	...	...	3,780
1805	5,395	...	...	...	...	...	...	...	5,395
1810	7,585	...	...	...	...	...	...	...	7,585
1815	9,848	...	...	...	...	...	...	...	9,848
1820	23,784	...	...	...	...	...	...	...	23,784
1825	29,309	...	...	...	...	10,979†	...	...	40,288
1830	33,900	...	...	...	877	18,108	...	...	52,885
1835	51,949	...	...	...	1,231	28,749	...	...	81,929
1840	85,560	...	...	8,272	1,434	32,040	...	...	127,306
1845	113,739	...	...	12,810	2,689	43,921	...	...	173,159
1850	154,976	...	...	35,902	3,576	44,229	...	...	238,683
1855	147,822	226,462†	...	48,843	8,311	38,680	...	...	470,118
1860	197,851	330,802	16,817†	64,340	9,597	49,653	...	...	668,560
1865	222,890	348,717	53,292	84,255	18,575	50,549	...	...	773,278
1870	272,121	397,230	69,221	94,894	15,511	53,517	...	...	902,494
1875	322,534	424,269	102,161	108,706	16,141	54,678	...	...	1,028,489
1880	404,952	450,558	124,013	147,438	16,985	60,568	...	...	1,204,514
1885	518,606	504,097	186,866	162,425	20,688	67,712	...	...	1,460,394
1890	602,704	595,519	223,252	166,049	28,854	76,453	...	...	1,692,831
1895	668,209	607,933	248,865	180,314	69,733	80,485	...	...	1,855,539
1900	716,047	601,773	274,684	180,349	110,088	89,763	4,288†	...	1,976,992
1905	782,897	598,134	291,807	181,467	146,498	95,947	3,368	...	2,100,118
1910	858,181	646,482	325,513	206,557	157,971	98,866	2,738	...	2,296,308
1911	888,138	668,759	337,955	212,650	168,094	98,594	2,662	1,068†	2,377,920

* Details not available. † Previously included with New South Wales. ‡ Previously included with South Australia.

COMMONWEALTH POPULATION FROM EARLIEST DATE.—Continued.

FEMALES.

Year.	Estimated Population at end of Year.								
	N.S.W.	Victoria.	Q'nsland.	S. Aust.	W. Aust.	Tasman.	North. Ter.	Fd. Cp. Ter.	C'wealth.
1788	...	...	...	...	...	...	...	...	†
1790	...	...	...	...	...	...	...	...	†
1795	...	...	...	...	...	...	...	...	†
1800	1,437	...	...	...	...	...	...	...	1,437
1805	2,312	...	...	...	...	...	...	...	2,312
1810	3,981	...	...	...	...	...	...	...	3,981
1815	5,215	...	...	...	...	...	...	...	5,215
1820	9,759	...	...	...	...	...	...	...	9,759
1825	9,004	...	...	...	...	3,213	...	...	12,217
1830	10,688	...	...	...	295	6,171	...	...	17,154
1835	19,355	...	...	...	647	11,423	...	...	31,425
1840	41,908	...	...	6,358	877	13,959	...	...	63,102
1845	74,179	...	...	9,650	1,790	20,370	...	...	105,989
1850	111,924	...	...	27,798	2,310	24,641	...	...	166,673
1855	118,179	120,843*	...	48,544	4,294	31,282	...	...	323,142
1860	150,695	207,932	11,239*	61,242	5,749	40,168	...	...	477,025
1865	185,616	269,074	33,629	77,222	7,806	43,418	...	...	616,765
1870	225,871	326,695	46,051	89,652	9,624	47,369	...	...	745,262
1875	270,833	370,665	66,944	101,370	10,861	49,061	...	...	869,734
1880	336,190	408,047	87,027	128,955	12,576	54,222	...	...	1,027,017
1885	425,261	455,741	129,815	146,888	15,271	61,148	...	...	1,234,124
1890	510,571	538,209	168,864	152,898	19,648	68,334	...	...	1,458,524
1895	587,294	577,743	194,199	171,654	30,782	74,410	...	...	1,636,082
1900	644,258	594,440	219,163	176,901	69,879	83,137	569†	...	1,788,347
1905	704,987	612,287	239,675	181,154	103,640	90,438	678	...	1,932,859
1910	785,674	654,926	273,503	200,311	118,861	94,937	563	...	2,128,775
1911	808,337	670,343	284,174	205,522	126,087	94,885	586	853*	2,190,787

PERSONS.

1788	859	...	...	...	...	...	...	...	859
1790	2,056	...	...	...	...	...	...	...	2,056
1795	3,466	...	...	...	...	...	...	...	3,466
1800	5,217	...	...	...	...	...	...	...	5,217
1805	7,707	...	...	...	...	...	...	...	7,707
1810	11,566	...	...	...	...	...	...	...	11,566
1815	15,063	...	...	...	...	...	...	...	15,063
1820	33,543	...	...	...	...	...	...	...	33,543
1825	38,313	...	...	...	...	14,192*	...	...	52,505
1830	44,588	...	...	...	1,172	24,279	...	...	70,039
1835	71,304	...	...	...	1,878	40,172	...	...	113,354
1840	127,468	...	...	14,630	2,311	45,999	...	...	190,408
1845	187,918	...	...	22,460	4,479	64,291	...	...	279,148
1850	266,900	...	...	63,700	5,886	68,870	...	...	405,356
1855	266,001	347,305*	...	97,387	12,605	69,962	...	...	793,260
1860	348,546	538,234	28,056*	125,582	15,346	39,821	...	...	1,145,585
1865	408,506	617,791	86,921	161,477	21,381	93,967	...	...	1,390,043
1870	497,992	723,925	115,272	184,546	25,135	100,886	...	...	1,647,756
1875	593,367	794,934	169,105	210,076	27,002	103,739	...	...	1,898,223
1880	741,142	858,605	211,040	276,393	29,561	114,790	...	...	2,231,531
1885	943,867	959,838	316,681	309,313	35,959	123,860	...	...	2,694,518
1890	1,113,275	1,133,728	392,116	318,947	43,502	144,787	...	...	3,151,355
1895	1,255,503	1,185,676	443,064	351,968	100,515	154,895	...	...	3,491,621
1900	1,360,305	1,196,213	493,847	357,250	179,967	172,900	4,857†	...	3,765,339
1905	1,487,884	1,210,421	531,482	362,621	250,188	186,385	4,046	...	4,032,977
1910	1,643,855	1,301,408	599,016	406,868	276,832	193,803	3,301	...	4,425,083
1911	1,696,475	1,339,102	622,129	418,172	294,181	193,479	3,248	1,921*	4,568,707

* Previously included with New South Wales † Details not available. ‡ Previously included with South Australia.

The tables on the two preceding pages, shewing the quinquennial and other figures for the male, female, and total population of each State and the Commonwealth; give sufficient indication, for general purposes, of its progress. A reference to the diagrams given hereinafter (175 to 177), on which the graphs shew the particulars for *each* year, is also desirable. The characteristics of the fluctuations of each element, or of the totals, will be more readily perceived by reference to the graphs than they possibly can by reference to these numerical tables. The earliest date for which particulars as to sex were available is 1796. The figures from 1788 to 1825 inclusive are based upon the results of the musters taken in those years; those for subsequent years are founded upon estimates made on the basis of the Census results and the annual returns of births and deaths and immigration and emigration.

The following table furnishes particulars relative to the increase of population of the Commonwealth during each decade, and the percentage of such increase on the population at the commencement of the decade :—

INCREASE OF COMMONWEALTH POPULATION.

Decade ended 31st December.	Increase during Decade.					
	Numerical.			Percentage.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
1790 ...	*	*	2,056	% *	% *	% *
1800 ...	*	*	3,161	*	*	153.75
1810 ...	3,805	2,544	6,349	100.66	177.04	121.70
1820 ...	16,199	5,778	21,977	213.57	145.14	190.01
1830 ...	29,101	7,395	36,496	122.36	75.78	108.80
1840 ...	74,421	45,948	120,369	140.72	267.86	171.86
1850 ...	111,377	103,571	214,948	87.49	164.13	112.89
1860 ...	429,877	310,352	740,229	180.10	186.20	182.61
1870 ...	233,934	268,237	502,171	34.99	56.23	43.84
1880 ...	302,020	281,755	583,775	33.47	37.81	35.43
1890 ...	488,317	431,507	919,824	40.54	42.02	41.22
1900 ...	284,161	329,823	613,984	16.79	22.61	19.48
1910 ...	319,316	340,428	659,744	16.15	19.04	17.52

* Not available.

§ 10. Principal Results of Census of 1911.

1. **Census Results.**—In the first issue of the Official Year Book tables are given shewing in some detail particulars concerning the Census of 1901 for the several States under the headings of Ages, Birthplaces, Occupations, Religions, and Conjugal Condition. (See Year Book No. 1, pp. 164 to 179.) In the following tables will be found similar particulars in respect of the Census of 3rd April, 1911.

2. **Ages.**—The numbers of persons of each sex at each age enumerated in the several States of the Commonwealth at the Census of 3rd April, 1911, are as follows :—

AUSTRALIAN POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO AGE.

(Exclusive of Full-blooded Aborigines.)

(A) MALES.

Age last Birthday.	States.						Territories.		C'wth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap.Ter.	
0	22,939	15,869	8,329	5,359	3,808	2,761	19	18	59,102
1	20,889	14,819	7,837	4,964	3,525	2,501	18	18	54,551
2	19,586	14,120	7,134	4,805	3,487	2,455	18	13	51,568
3	19,476	14,323	7,290	4,557	3,529	2,490	15	18	51,703
4	19,213	13,925	7,134	4,394	3,360	2,429	14	18	50,487
0-4	102,003	73,061	37,724	24,109	17,709	12,636	84	85	267,411
5	18,522	13,607	6,527	4,339	3,254	2,425	22	12	48,708
6	17,858	13,460	5,753	4,225	3,078	2,384	17	21	47,796
7	16,375	12,736	6,108	4,034	2,971	2,183	20	20	44,447
8	16,258	12,966	6,397	4,006	2,813	2,181	21	11	44,653
9	16,124	12,846	6,283	3,866	2,691	2,134	13	25	43,982
5-9	85,137	65,615	32,068	20,470	14,807	11,307	93	89	229,586
10	16,494	13,189	6,439	3,976	2,690	2,160	16	13	44,917
11	16,343	13,133	6,552	4,032	2,564	2,002	15	15	44,656
12	14,830	11,812	6,031	3,737	2,319	1,912	14	23	40,878
13	15,683	12,465	6,298	3,799	2,121	1,975	7	21	42,369
14	15,846	12,987	6,134	4,045	2,095	2,037	13	27	43,184
10-14	79,136	63,586	31,454	19,589	11,789	10,086	65	99	215,804
15	15,982	13,061	6,381	4,127	2,209	1,887	17	13	43,697
16	16,127	13,581	6,315	4,361	2,150	2,041	10	15	44,600
17	16,872	13,656	6,545	4,269	2,400	1,981	18	24	45,765
18	17,237	14,114	6,806	4,400	2,563	2,121	17	27	47,285
19	16,763	13,372	6,601	4,367	2,465	1,883	17	16	45,484
15-19	82,931	67,804	32,648	21,524	11,787	9,913	79	95	226,331
20	17,570	13,419	6,894	4,337	2,746	1,831	28	24	46,839
Under 21	366,827	283,485	140,778	90,029	58,838	45,773	349	392	966,471
21-24	69,744	48,476	26,716	17,227	11,967	7,012	118	80	181,340
25-29	76,480	51,955	29,053	19,020	15,487	7,731	156	90	199,922
30-34	64,228	44,928	24,445	15,057	15,641	6,570	175	75	171,119
35-39	55,121	41,308	21,411	12,287	15,551	5,911	213	70	151,872
40-44	50,940	42,512	20,086	11,468	13,923	5,555	340	43	144,867
45-49	46,638	41,015	18,769	10,300	10,758	5,157	384	58	133,079
50-54	39,345	31,866	15,202	9,543	7,345	4,368	415	48	108,132
55-59	27,544	19,486	10,271	7,253	4,199	3,019	293	48	72,058
60-64	20,023	13,834	7,474	4,971	2,788	2,115	184	27	51,416
65-69	15,370	11,432	5,889	4,006	1,869	1,581	54	26	40,227
70-74	10,611	9,415	4,260	2,555	1,124	1,041	39	18	29,063
75-79	6,658	7,275	2,103	1,529	576	678	7	5	18,831
80-84	2,719	3,903	768	818	254	341	2	3	8,808
85-89	771	1,133	236	289	64	144	...	1	2,638
90-94	185	267	52	68	25	43	...	...	640
95-99	95	34	9	19	3	16	...	...	116
100 & upwards	19	8	2	1	1	4	...	...	35
21 & upwards	486,381	368,847	186,746	116,411	101,575	51,286	2,325	592	1,314,163
Unspecified	4,490	3,259	1,982	918	1,152	532	60	8	12,401
Total	857,698	655,591	329,506	207,353	161,565	97,591	2,734	992	2,313,035

AUSTRALIAN POPULATION AT 3RD APRIL—Continued.

(B) FEMALES.

Age last Birthday.	States.						Territories.		C' with.
	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.	Fed. Cap. Ter.	
0	22,115	15,089	7,967	5,114	3,684	2,584	10	21	56,584
1	20,035	14,329	7,445	4,791	3,541	2,489	19	21	52,670
2	19,223	13,316	6,859	4,580	3,452	2,420	12	16	49,678
3	19,202	14,020	6,911	4,527	3,370	2,314	21	23	50,388
4	18,288	13,663	6,798	4,409	3,168	2,337	25	14	46,702
0-4	96,863	70,417	35,980	23,421	17,215	12,144	87	95	258,222
5	17,991	13,352	6,383	4,215	3,142	2,180	14	27	47,304
6	17,472	12,954	6,565	4,124	3,052	2,191	16	14	46,388
7	15,883	12,505	6,117	3,861	2,906	2,191	24	17	43,504
8	16,192	12,754	6,141	3,930	2,744	2,143	14	14	43,932
9	15,582	12,339	6,212	3,720	2,543	2,097	20	19	42,532
5-9	83,120	63,904	31,418	19,850	14,387	10,802	88	91	223,660
10	16,254	12,897	6,306	3,975	2,647	2,020	15	25	44,199
11	15,986	13,009	6,545	4,024	2,598	2,017	10	13	44,152
12	15,328	11,916	5,935	3,668	2,286	1,775	15	17	40,940
13	15,063	12,136	6,104	3,732	2,043	1,901	13	14	41,026
14	15,397	12,565	6,105	4,013	2,053	1,940	7	20	42,100
10-14	77,998	62,523	30,995	19,412	11,627	9,653	60	89	212,357
15	15,893	13,213	6,235	4,110	2,023	1,928	12	24	43,438
16	15,963	13,359	6,135	4,231	2,142	1,933	13	18	43,794
17	16,313	13,604	6,274	4,301	2,227	1,970	13	22	44,724
18	16,706	13,917	6,258	4,310	2,224	2,018	19	13	45,467
19	16,138	13,626	5,986	4,398	2,190	1,916	13	15	44,282
15-19	81,015	67,719	30,888	21,350	10,906	9,765	70	92	221,705
20	16,935	13,845	6,272	4,255	2,168	1,986	13	14	45,488
Under 21	357,931	278,406	135,553	88,288	56,203	44,350	318	381	961,432
21-24	65,915	51,372	23,135	16,381	8,416	7,307	32	45	172,603
25-29	72,390	55,651	23,508	18,517	10,429	7,872	46	41	188,454
30-34	59,896	48,694	19,289	14,707	10,582	6,579	50	44	159,841
35-39	50,708	44,549	16,738	12,213	9,917	5,361	35	39	139,560
40-44	43,455	42,480	14,607	11,204	7,924	4,899	38	44	124,651
45-49	37,583	38,477	12,246	10,042	5,648	4,488	24	29	108,537
50-54	29,964	29,420	9,519	8,348	3,745	3,755	11	25	84,787
55-59	20,905	18,457	6,356	6,190	2,427	2,558	9	21	56,923
60-64	16,352	14,316	4,918	4,626	1,818	1,928	3	13	43,974
65-69	13,014	12,603	4,160	3,734	1,320	1,614	4	15	36,464
70-74	8,585	9,972	2,792	2,717	813	1,119	1	8	26,007
75-79	5,242	6,934	1,411	1,815	376	719	1	3	16,501
80-84	2,223	3,387	596	971	139	369	...	4	7,689
85-89	783	1,129	232	373	59	128	...	2	2,706
90-94	241	265	50	99	10	37	...	...	702
95-99	34	56	10	19	1	7	...	...	137
100 & upwards	12	10	3	2	2	...	...	...	29
21 & upwards	427,302	377,772	139,570	111,958	63,626	48,740	254	333	1,169,555
Unspecified	3,803	3,780	1,184	954	720	530	4	8	10,983
Total	789,036	659,960	276,307	201,300	120,549	93,620	576	722	2,141,970

AUSTRALIAN POPULATION AT 3RD APRIL—Continued.

(C) PERSONS.

Age last Birthday.	States.						Territories.		C'with.
	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Fed. Cap.Ter.	
0	45,054	30,958	16,296	10,473	7,492	5,945	29	39	115,686
1	40,874	29,148	15,282	9,785	7,066	4,990	37	39	107,221
2	38,759	27,436	13,993	9,385	6,939	4,875	30	29	101,446
3	38,678	28,348	14,201	9,064	6,899	4,804	36	41	102,091
4	37,501	27,588	13,932	8,803	6,528	4,766	39	32	99,189
0-4	200,866	143,478	73,704	47,530	34,924	24,780	171	180	525,633
5	36,513	26,959	12,910	8,554	6,396	4,605	36	39	96,012
6	35,390	26,414	13,318	8,349	6,130	4,575	33	35	94,184
7	32,258	25,241	12,225	7,895	5,877	4,374	44	37	87,951
8	32,450	25,720	12,538	7,936	5,557	4,324	35	25	88,585
9	31,706	25,185	12,495	7,586	5,234	4,231	33	44	86,514
5-9	168,257	129,519	63,486	40,320	29,194	22,109	181	180	453,246
10	32,688	26,066	12,745	7,951	5,337	4,180	31	38	89,056
11	32,279	26,142	13,097	8,066	5,162	4,019	25	28	88,806
12	30,153	23,728	11,966	7,405	4,605	3,687	29	40	81,618
13	30,766	24,601	12,402	7,531	4,164	3,876	20	35	83,395
14	31,243	25,552	12,239	8,058	4,148	3,977	20	47	86,284
10-14	157,134	126,109	62,449	39,001	28,416	19,739	125	188	428,161
15	31,875	26,294	12,616	8,237	4,232	3,815	29	37	87,135
16	32,090	26,940	12,450	8,592	4,292	3,974	23	33	88,394
17	33,185	27,260	12,819	8,570	4,627	3,951	31	46	90,489
18	33,945	28,031	13,064	8,710	4,787	4,139	36	40	92,752
19	32,901	26,998	12,587	8,765	4,655	3,799	30	31	89,766
15-19	169,996	135,523	63,536	42,874	22,593	19,678	149	187	448,536
20	34,505	27,264	13,156	8,592	4,914	3,817	41	38	92,327
Under 21	724,758	561,893	276,331	178,317	115,041	90,123	667	773	1,947,903
21-24	135,659	99,848	49,851	33,608	20,383	14,319	150	125	353,943
25-29	148,820	107,606	52,561	37,537	25,916	15,603	202	131	388,376
30-34	124,124	93,622	43,734	29,764	26,223	13,149	225	119	330,960
35-39	105,820	85,857	38,149	24,500	25,468	11,272	248	109	291,432
40-44	94,395	84,992	34,693	22,672	21,847	10,454	378	87	269,518
45-49	84,221	79,492	31,015	20,342	16,406	9,645	408	87	241,616
50-54	69,309	61,286	24,721	17,891	11,090	8,123	426	73	192,919
55-59	48,449	37,943	16,627	13,443	6,626	5,577	247	69	128,961
60-64	36,375	28,150	12,392	9,597	4,606	4,043	187	40	95,390
65-69	28,384	24,035	10,049	7,740	3,189	3,195	58	41	76,691
70-74	19,196	19,387	7,052	5,272	1,937	2,160	40	26	55,070
75-79	11,900	14,209	3,514	3,344	952	1,397	8	8	35,332
80-84	4,942	7,290	1,364	1,789	393	710	2	7	16,497
85-89	1,554	2,262	468	662	123	272	...	3	5,344
90-94	426	532	102	167	35	80	...	...	1,342
95-99	69	90	19	38	4	23	...	...	243
100 & upwards	31	18	5	3	3	4	...	...	64
21 & upwards	913,683	746,619	326,316	228,369	165,201	100,026	2,579	925	2,483,718
Unspecified	8,293	7,039	3,166	1,872	1,872	1,062	64	16	23,384
Total	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

The following table furnishes a comparison between the age results of the Censuses of 1901 and 1911:—

COMPARATIVE STATEMENT OF THE POPULATION OF THE COMMONWEALTH

At the Censuses of 1901 and 1911, classified according to Age.
(Exclusive of Full-blooded Aborigines.)

Population of the Commonwealth.									
Age last Birthday.	Census of 31st March, 1901.			Census of 3rd April, 1911.			Increase during 10 years.		
	Males.	Females.	Persons.	Males.	Females.	Persons.	Males.	Females.	Persons.
0	47,163	46,015	93,178	59,102	56,584	115,686	11,939	10,569	22,508
1	42,785	42,059	84,844	54,551	52,670	107,221	11,766	10,611	22,377
2	43,035	41,530	84,565	51,568	49,878	101,446	8,533	8,348	16,881
3	43,454	42,409	85,863	51,703	50,388	102,091	8,249	7,979	16,228
4	43,373	42,604	85,977	50,487	48,702	99,189	7,114	6,098	13,212
0-4	219,810	214,617	434,427	267,411	258,222	525,633	47,601	43,605	91,206
5	45,137	44,053	89,190	48,708	47,304	96,012	3,571	3,251	6,822
6	45,614	44,681	90,295	47,796	46,388	94,184	2,182	1,707	3,889
7	46,451	45,550	92,001	44,447	43,504	87,951	-2,004	-2,046	-4,050
8	46,851	45,447	92,298	44,653	43,932	88,585	-2,198	-1,515	-3,713
9	46,696	45,977	92,673	43,982	42,533	86,514	-2,914	-3,445	-6,359
5-9	230,949	225,708	456,657	229,586	223,660	453,246	-1,363	-2,048	-3,411
10	46,649	45,635	92,284	44,917	44,139	89,056	-1,732	-1,496	-3,228
11	43,727	42,840	86,567	44,656	44,152	88,808	929	1,312	2,241
12	43,979	43,229	87,208	40,678	40,940	81,618	-3,301	-2,289	-5,590
13	42,075	41,803	83,878	42,369	41,026	83,395	294	777	483
14	41,878	41,181	83,059	43,184	42,100	85,284	1,306	919	2,225
10-14	218,308	214,688	432,996	215,804	212,357	428,161	-2,504	-2,331	-4,835
15-19	189,472	188,314	377,786	226,831	221,705	448,536	37,359	33,391	70,750
20	35,232	36,268	71,500	46,839	45,488	92,327	11,607	9,220	20,827
Under 21	893,771	879,595	1,773,366	986,471	961,432	1,947,903	92,700	81,837	174,537
21-24	139,128	140,322	279,450	181,340	172,603	353,943	42,212	32,281	74,493
25-29	162,234	156,640	318,874	199,922	188,454	388,376	37,688	31,814	69,502
30-34	156,075	136,047	292,122	171,119	159,841	330,960	15,044	23,794	38,538
35-39	151,849	120,438	272,287	151,872	139,560	291,432	23	19,122	19,145
40-44	125,836	95,446	220,972	144,867	124,651	269,518	19,041	29,505	48,546
45-49	88,523	65,729	154,252	133,079	108,537	241,616	44,556	42,808	87,364
50-54	67,156	52,588	119,744	108,132	84,787	192,919	40,978	32,199	73,175
55-59	52,595	43,057	95,652	72,058	56,923	128,981	19,463	13,866	33,329
60-64	45,976	37,096	83,072	51,416	43,974	95,390	5,440	6,878	12,318
65-69	38,478	30,421	68,899	40,227	36,464	76,691	1,749	6,043	7,792
70-74	25,876	18,412	44,288	29,063	26,007	55,070	3,187	7,595	10,782
75-79	12,605	9,699	22,304	18,831	16,501	35,332	6,226	6,812	13,038
80-84	6,093	5,038	11,071	8,808	7,689	16,497	2,775	2,651	5,426
85-89	1,662	1,562	3,224	2,638	2,706	5,344	976	1,144	2,120
90-94	409	385	794	640	702	1,342	231	317	548
95-99	90	70	169	116	127	243	17	57	74
100 & upwards	30	20	50	35	29	64	5	9	14
21 & upwards	1,074,554	912,660	1,987,214	1,314,163	1,169,555	2,483,718	239,603	256,895	496,504
Unspecified	9,603	3,618	13,221	12,401	10,983	23,384	2,798	7,365	10,163
Total	1,977,928	1,795,873	3,773,801	2,313,035	2,141,970	4,455,005	335,107	346,097	681,204

Note. — denotes decrease.

3. **Birthplaces.**—In the next table particulars are given of the populations of the several States of the Commonwealth on 3rd April, 1911, classified according to sex and birthplace, the birthplaces being grouped under the five continental divisions of the globe, with two additional headings for those born in Polynesia, and those born at sea. Of the total population of 4,455,005 those of unspecified birthplace numbered 30,468, or slightly less than 7 per thousand:—

AUSTRALIAN POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO BIRTHPLACE

(Exclusive of Full-blooded Aborigines.)

(A) MALES.

Birthplace.	States.						Territories.		Total C'with.
	N.S.W.	Vic.	Q'land	S.A.	W.A.	Tas.	N. Ter.	Fed. Cap. Ter.	
AUSTRALASIA—									
Commonwealth of Aust.—									
New South Wales...	608,517	13,273	23,879	3,818	9,623	1,063	151	755	661,079
Victoria ...	42,701	495,493	10,479	7,490	30,864	4,590	123	39	591,776
Queensland ...	11,018	1,954	192,682	441	2,006	183	156	6	208,446
South Australia ...	13,005	11,400	2,154	157,578	13,275	445	285	4	198,146
Western Australia ...	1,253	2,244	255	1,274	52,743	115	8	1	57,893
Tasmania ...	5,209	8,615	1,323	626	1,386	80,115	14	4	97,192
Northern Territory ...	12	10	11	37	13	282	1	1	365
Australia (undefined) ...	10,021	8,673	2,074	2,547	1,359	437	10	35	25,156
New Zealand ...	7,296	4,968	1,632	554	1,819	574	17	2	16,862
EUROPE—England ...	74,754	48,063	38,583	16,753	20,866	5,280	121	71	204,441
Wales ...	2,791	1,495	1,491	537	890	156	3	1	7,374
Scotland ...	19,403	14,200	12,146	3,298	4,702	1,145	43	15	54,952
Ireland ...	24,098	19,169	16,186	3,695	5,733	1,046	47	26	70,000
Isle of Man ...	261	187	102	47	72	11	2	1	681
Other European Brit. Poss.	495	398	214	163	146	31	2	1	1,449
Austria-Hungary ...	520	280	277	122	1,173	24	1	1	2,397
Belgium ...	90	72	29	24	20	6	1	1	241
Denmark ...	1,083	779	1,732	243	347	78	3	1	4,266
France ...	935	471	247	116	173	27	4	1	1,973
Germany ...	5,333	4,343	6,983	3,046	1,647	353	20	2	21,717
Greece ...	764	279	248	75	323	4	1	1	1,693
Italy ...	1,332	1,140	748	153	2,151	17	2	1	5,543
Netherlands ...	202	151	84	125	73	8	1	1	643
Norway ...	964	726	478	437	386	42	5	1	3,038
Portugal ...	77	38	17	7	9	9	1	1	158
Russia ...	1,218	777	581	334	463	37	3	1	3,413
Spain ...	90	159	78	9	147	6	1	1	489
Sweden ...	1,679	1,138	840	617	700	107	3	1	5,084
Switzerland ...	340	492	259	72	132	13	1	1	1,299
Other European Countries	134	71	80	46	128	3	1	1	462
ASIA—British India ...	1,764	1,179	629	545	748	175	7	2	5,049
Ceylon ...	131	60	180	9	73	10	8	1	472
Hong Kong ...	121	65	69	9	89	2	1	1	355
Straits Settlements...	57	28	115	11	415	15	1	1	641
Other Asiatic British Poss.	22	20	36	5	64	3	2	1	152
Afghanistan ...	31	6	11	37	109	6	1	1	200
Arabia ...	17	3	6	3	2	1	1	1	33
China ...	7,509	4,246	5,393	231	1,601	353	1,119	1	20,453
Japan ...	125	47	1,387	17	1,599	1	84	1	3,260
Java ...	17	11	283	3	209	7	1	1	535
Philippine Islands ...	22	5	91	1	260	46	1	1	424
Syria ...	448	186	71	127	89	33	1	1	895
Other Asiatic Countries	122	83	102	36	407	1	64	1	815
AFRICA—Cape of Good Hope	168	103	48	23	21	11	1	1	374
Mauritius ...	145	116	58	42	40	10	1	1	412
Natal ...	51	55	17	8	9	9	1	1	149
Orange Free State ...	3	2	2	...	5	2	1	1	139
Transvaal ...	50	41	18	13	12	5	1	1	139
South Africa (undefined)	554	381	140	93	122	21	2	1	1,313
Other African British Poss.	28	14	10	3	8	1	3	1	67
Egypt ...	38	19	18	7	15	3	1	1	100
Other African Countries ...	50	16	21	4	12	8	3	1	114
AMERICA—Barbadoes	21	8	5	6	15	...	...	...	55
Canada ...	852	518	355	112	232	52	3	1	2,126
Jamaica ...	69	42	29	13	13	2	1	1	168
Newfoundland ...	34	33	17	5	7	3	1	1	99
Other American Brit. Poss.	67	53	41	17	33	6	1	1	217
Argentine Republic...	26	13	11	3	12	3	1	1	68
Brazil ...	19	15	13	3	5	5	1	1	60
Chile ...	29	12	11	1	5	1	1	1	59
Mexico ...	15	10	8	2	7	...	...	...	42
Peru ...	16	4	4	...	1	...	...	...	25
United States of America	1,844	1,085	661	323	423	103	7	3	4,449
Other American Countries	119	81	62	38	60	8	2	1	370
POLYNESIA—Fiji ...	227	67	74	10	20	11	5	1	414
Trust Islands ...	28	9	5	2	2	...	...	...	46
Papua ...	8	1	387	1	1	1	1	1	598
Other Polynesian Brit. Pos.	54	...	198	1	6	...	...	...	259
New Caledonia ...	114	10	45	...	2	1	1	1	178
New Hebrides ...	70	16	196	1	2	2	3	1	290
Samoa ...	27	5	29	4	5	...	...	...	70
Other Polynesian Islands	42	9	189	3	4	4	1	1	251
St. Sea Ids. (so described)	106	4	444	1	9	3	3	1	570
At Sea ...	317	630	342	211	146	62	1	1	2,209
Unspecified ...	6,036	5,225	1,877	1,091	1,341	801	27	20	16,418
Total ...	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035

AUSTRALIAN POPULATION AT 3RD APRIL, 1911—Continued.

(B) FEMALES.

Birthplace.	States.						Territories.		Total C'with.
	N.S.W.	Vict.	Q'Ind.	S.A.	W.A.	Tas.	N. Ter.	Fed. C. Ter.	
AUSTRALASIA—									
Commonwealth of Aust.—									
New South Wales	610,340	15,419	15,042	3,623	7,601	1,267	34	622	653,953
Victoria	34,835	514,729	5,464	7,017	23,749	4,189	20	8	590,011
Queensland	12,275	2,448	189,534	392	1,660	249	57	3	206,618
South Australia	11,189	12,127	1,194	160,495	11,060	477	79	1	196,622
Western Australia	1,229	2,292	227	1,311	51,465	126	7	...	56,657
Tasmania	5,112	10,415	575	602	1,093	78,774	6	1	96,578
Northern Territory	5	8	17	43	8	1	263	...	345
Australia (undefined)	10,498	9,848	1,885	2,962	1,145	466	10	21	26,835
New Zealand	6,667	5,099	944	492	1,235	626	1	2	15,006
EUROPE—England									
Wales	47,342	38,629	26,683	13,145	11,987	3,758	24	21	141,589
Scotland	1,591	1,195	1,129	348	435	101	2	...	4,801
Scotland	11,857	12,377	8,384	2,353	2,221	927	4	8	38,131
Ireland	22,558	22,308	15,413	4,302	3,718	1,109	8	18	69,434
Isle of Man	106	102	55	27	31	5	...	...	326
Other European Brit. Poss.	268	339	112	97	92	21	...	...	929
Austria-Hungary	116	75	55	23	107	1	...	...	377
Belgium	39	27	9	8	11	3	1	...	98
Denmark	214	132	909	30	69	43	...	...	1,397
France	412	263	86	50	81	11	...	...	903
Germany	1,918	1,799	4,996	1,931	389	237	2	1	11,273
Greece	58	18	14	1	12	2	...	...	105
Italy	391	359	181	81	210	4	...	...	1,176
Netherlands	35	35	13	5	11	2	1	...	102
Norway	68	81	207	16	40	1	...	...	413
Portugal	7	6	...	...	2	...	...	...	15
Russia	318	296	214	45	163	7	...	...	1,043
Spain	44	64	19	10	31	1	...	...	169
Sweden	118	82	214	36	40	12	...	...	502
Switzerland	102	140	117	38	32	8	...	...	437
Other European Countries	50	27	29	5	27	...	...	...	138
ASIA—British India									
Ceylon	518	427	192	121	192	144	1	...	1,595
Hong Kong	36	40	25	6	16	16	...	...	139
Straits Settlements	29	14	5	5	4	1	...	...	58
Straits Settlements	18	15	11	4	9	2	1	...	60
Other Asiatic British Poss.	12	15	6	...	2	2	...	...	37
Afghanistan	...	...	...	...	...	...	...	...	...
Arabia	1	...	1	...	...	...	...	...	2
China	100	58	80	11	20	9	46	...	322
Japan	14	10	65	5	115	...	5	...	214
Java	13	12	16	...	1	1	...	...	43
Philippine Islands	12	5	1	...	1	...	1	...	20
Syria	307	137	80	58	26	24	...	...	632
Other Asiatic Countries	17	6	7	1	5	...	...	...	36
AFRICA—Cape of Good Hope									
Mauritius	163	147	31	15	14	15	...	...	385
Natal	95	83	25	24	15	3	...	...	245
Natal	46	55	11	9	17	8	...	...	146
Orange Free State	7	3	1	...	3	...	...	...	14
Transvaal	46	48	18	7	13	5	...	...	137
South Africa (undefined)	503	373	97	98	104	37	...	...	1,212
Other African British Poss.	10	24	4	4	5	2	...	...	49
Egypt	26	7	3	3	7	1	...	...	47
Other African Countries	16	11	5	4	1	4	...	...	41
AMERICA—Barbadoes									
Canada	6	4	3	...	2	...	...	...	15
Canada	280	262	99	65	83	28	...	1	818
Jamaica	21	45	11	2	7	1	...	...	87
Newfoundland	10	15	5	1	2	...	...	...	33
Other American Brit. Poss.	18	29	15	10	14	1	...	...	87
Argentina Republic	9	5	4	3	1	4	...	...	26
Brazil	7	15	5	3	3	3	...	...	36
Chile	11	8	2	...	3	...	...	...	24
Mexico	11	4	3	1	4	...	...	...	23
Peru	3	3	2	...	1	...	...	...	9
United States of America	890	665	281	138	168	51	...	...	2,193
Other American Countries	47	54	40	18	22	8	...	...	189
POLYNESIA—Fiji									
Friendly Islands	249	102	40	14	17	15	1	...	438
Papua	38	4	1	6	...	...	...	...	49
Other Polynesian Brit. Poss.	15	4	13	2	1	...	...	...	35
New Caledonia	7	...	8	1	...	...	...	...	16
New Caledonia	129	16	11	5	7	1	...	...	169
New Hebrides	18	15	11	2	...	4	...	...	50
Samoa	31	6	13	2	2	...	...	...	54
Other Polynesian Islands	36	11	18	...	3	...	...	...	68
Sth. Sea Ids. (so described)	5	...	46	...	1	3	...	...	55
At sea	662	673	287	211	135	60	1	...	2,029
Unspecified	4,782	5,793	984	958	778	739	1	15	14,050
Total	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970

AUSTRALIAN POPULATION AT 3RD APRIL, 1911.—Continued.
(C) PERSONS.

Birthplace.	States.						Territories.		Total C'with.
	N.S.W.	Vic.	Q'land	S.A.	W.A.	Tas.	N. Ter.	Fed. Cap. Ter.	
AUSTRALASIA—									
Commonwealth of Aust.—									
New South Wales	1,218,857	28,692	38,921	7,446	17,224	2,330	185	1,377	1,315,032
Victoria	77,536	1,010,219	15,943	14,507	54,613	8,779	143	47	1,181,787
Queensland	23,293	4,402	382,216	833	3,666	432	213	9	415,064
South Australia	24,194	23,527	3,348	318,073	24,335	922	364	5	394,768
Western Australia	2,482	4,536	482	2,585	104,208	241	15	1	114,550
Tasmania	10,321	19,030	1,798	1,228	2,479	158,889	20	5	193,770
Northern Territory	17	18	28	80	21	1	545	...	770
Australia (undefined)	20,519	18,521	3,959	5,509	2,504	903	20	56	51,991
New Zealand	13,963	10,067	2,576	986	3,054	1,200	18	4	31,868
EUROPE—England									
Wales	122,096	86,692	65,266	29,898	32,853	8,988	145	92	346,030
Scotland	4,382	2,690	2,620	885	1,325	257	15	1	12,175
Ireland	31,260	26,577	20,530	5,651	6,923	2,072	47	23	93,083
Isle of Man	46,656	41,477	31,599	7,997	9,451	2,155	55	44	139,434
Other European Brit. Poss.	367	289	157	74	103	16	...	1	1,007
Austria-Hungary	763	737	326	260	238	52	2	...	2,378
Belgium	636	355	332	145	1,280	25	1	...	2,774
Denmark	129	99	38	32	31	9	1	...	339
France	1,297	911	2,641	273	416	121	3	1	5,663
Germany	1,347	734	333	166	254	38	4	...	2,876
Greece	7,241	6,142	11,979	4,977	2,036	590	22	3	32,990
Italy	832	297	262	76	335	6	1,798
Netherlands	1,723	1,499	929	184	2,361	21	2	...	6,719
Norway	237	186	97	130	84	10	1	...	745
Portugal	1,032	807	685	453	426	43	5	...	3,451
Russia	84	44	17	7	11	9	1	...	173
Spain	1,536	1,073	795	379	626	44	3	...	4,456
Sweden	184	223	97	19	178	7	658
Switzerland	1,797	1,320	1,054	653	740	119	3	...	5,586
Other European Countries	442	632	376	110	154	21	1	...	1,736
ASIA—British India									
Ceylon	184	98	109	51	155	3	600
Hong Kong	2,282	1,606	821	666	940	319	8	2	6,644
Straits Settlements	167	100	205	15	89	26	8	1	611
Other Asiatic British Poss.	150	79	74	14	93	3	413
Afghanistan	75	43	126	15	424	2	16	...	701
Arabia	34	35	42	5	66	5	2	...	189
China	31	6	11	37	109	...	6	...	300
Japan	18	3	7	3	2	1	1	...	25
Java	7,609	4,802	5,473	242	1,621	363	1,165	1	20,775
Philippine Islands	139	57	1,452	22	1,714	1	89	...	3,474
Syria	80	23	304	3	210	1	7	...	578
Other Asiatic Countries	34	10	92	...	261	...	47	...	444
Mauritius	755	323	151	185	55	57	...	1	1,527
Natal	139	89	109	37	412	1	64	...	851
Orange Free State	331	250	79	38	35	26	759
Transvaal	240	199	88	66	55	13	1	...	657
South Africa (undefined)	97	110	28	17	26	17	295
Other African British Poss.	10	5	3	...	8	2	28
Egypt	96	89	36	20	25	10	276
Other African Countries	1,057	754	237	191	226	58	2	...	2,525
AFRICA—Cape of Good Hope									
Mauritius	38	38	14	7	13	3	3	...	116
Natal	64	26	21	10	22	4	147
Orange Free State	66	27	26	8	13	12	3	...	155
Transvaal	27	12	8	6	17	70
South Africa (undefined)	1,132	780	455	177	315	80	3	2	2,944
Other African Countries	90	87	40	15	20	3	255
Mauritius	44	48	22	6	9	3	132
Natal	85	82	56	27	47	7	304
Orange Free State	35	18	15	6	13	7	94
Transvaal	26	30	18	6	8	8	96
South Africa (undefined)	40	20	13	1	8	1	83
Other African Countries	26	14	11	3	11	65
Mauritius	19	7	6	...	2	34
Natal	2,734	1,750	942	461	591	154	7	3	6,642
Orange Free State	166	135	102	56	82	15	2	...	559
Transvaal	476	169	114	24	37	26	6	...	852
South Africa (undefined)	66	13	6	8	2	95
Other African Countries	23	5	400	3	2	433
Mauritius	61	...	206	2	6	275
Natal	243	26	56	5	15	2	347
Orange Free State	88	31	207	3	2	6	3	...	340
Transvaal	58	11	42	6	7	124
South Africa (undefined)	78	20	207	3	7	4	319
Other African Countries	111	4	490	1	10	6	3	...	625
Mauritius	1,479	1,303	629	422	281	122	2	...	4,238
Natal	10,818	11,018	2,861	2,049	2,119	1,540	28	35	30,468
Transvaal
South Africa (undefined)
Other African Countries
Mauritius
Natal
Orange Free State
Transvaal
South Africa (undefined)
Other African Countries
Mauritius
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Orange Free State
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South Africa (undefined)
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Natal
Orange Free State
Transvaal
South Africa (undefined)
Other African Countries
Mauritius
Natal
Orange Free State
Transvaal									

The following table furnishes a comparison between the birthplace results of the Censuses of 1901 and 1911 :—

COMPARATIVE STATEMENT OF THE POPULATION OF THE COMMONWEALTH

At the Censuses of 1901 and 1911, classified according to Birthplace.
(Exclusive of Full-blooded Aboriginals.)

Birthplace.	Census of 31st March, 1901.			Census of 3rd April, 1911.			Increase during 10 years.		
	Males.	Females	Total.	Males.	Females	Total.	Males.	Female	Total.
AUSTRALASIA—									
C'wealth of Aust.—									
New South Wales	524,239	520,526	1,044,765	661,079	653,953	1,315,032	136,840	133,427	270,267
Victoria	499,748	500,082	999,830	591,776	590,011	1,181,787	92,028	89,929	181,957
Queensland	153,438	152,431	305,869	208,446	206,618	415,064	55,008	54,187	109,195
S.A.(incl. N. Ter.)	168,199	167,529	335,728	198,511	196,967	395,478	30,312	29,438	59,750
West. Australia	28,288	27,980	56,268	57,893	56,657	114,550	29,605	28,677	58,282
Tasmania	81,999	81,447	163,446	97,192	96,578	193,770	15,193	15,131	30,324
Aust. (undefined)	1,182	1,215	2,397	25,156	26,835	51,991	23,974	25,620	49,594
New Zealand	13,568	12,220	25,788	16,862	15,006	31,868	3,294	2,786	6,080
EUROPE—									
England & Wales*	230,332	162,989	393,321	212,496	146,716	359,212	-17,836	-16,273	-34,109
Scotland	58,754	42,999	101,753	54,952	38,131	93,083	-3,802	-4,868	-8,670
Ireland	92,037	92,048	184,085	70,000	69,434	139,434	-22,037	-22,614	-44,651
Other Eur. Br. Pos.	265	165	430	1,449	929	2,378	1,184	764	1,948
Austria-Hungary	1,661	241	1,902	2,307	377	2,774	736	136	872
Belgium	264	93	357	241	98	339	23	5	18
Denmark	4,749	1,532	6,281	4,266	1,397	5,663	-483	-135	-618
France	2,618	974	3,592	1,973	903	2,876	-645	-71	-716
Germany	25,002	13,350	38,352	21,771	11,273	32,990	-3,285	-2,077	-5,362
Greece	815	63	878	1,693	105	1,798	878	49	920
Italy	4,871	807	5,678	5,543	1,176	6,719	672	369	1,041
Netherlands	511	83	594	643	102	745	132	19	151
Portugal	287	24	311	158	15	173	-129	-9	-138
Russia	2,648	710	3,358	3,413	1,043	4,456	765	333	1,098
Spain	384	131	515	489	169	658	105	38	143
Sweden & Norway	8,881	982	9,863	8,122	915	9,037	-759	-67	-826
Switzerland	1,611	428	2,039	1,299	437	1,736	-312	-9	-303
Other Eur. Counts.	387	136	523	462	138	600	75	2	77
ASIA—									
British India	6,075	1,562	7,637	5,049	1,595	6,644	-1,026	-38	-993
Ceylon	479	130	609	472	139	611	7	9	2
Hong Kong	138	29	167	355	58	413	217	29	246
Straits Settlements	618	46	664	641	60	701	23	14	37
Other Asiatic B. Pos.	80	30	110	152	37	189	72	7	79
Afghanistan	393	...	393	200	...	200	-193	...	-193
Arabia	53	8	61	33	2	35	-20	-6	-26
China	29,513	394	29,907	20,453	322	20,775	-9,060	-72	-9,132
Japan	3,167	426	3,593	3,260	214	3,474	93	212	119
Java	267	27	294	535	43	578	268	16	284
Philippine Islands	677	12	689	424	20	444	-253	-8	-245
Syria	986	512	1,498	895	632	1,527	91	120	29
Other Asiatic Cties.	1,326	66	1,392	815	36	851	-511	-30	-541
AFRICA—									
Cape of Good Hope	452	377	829	374	285	759	-78	-8	-70
Mauritius	477	263	740	412	245	657	-65	-18	-83
Natal	66	40	106	149	146	295	88	106	189
Orange Free State	2	1	3	14	14	28	12	13	25
Transvaal	12	14	26	139	137	276	127	123	250
S. Af'ca(undefined)	292	244	536	1,313	1,212	2,525	1,021	968	1,989
Other African B.P.	71	51	122	67	49	116	-4	-2	-6
Egypt	76	32	108	100	47	147	24	15	39
Other African Cties	294	105	399	114	41	155	-180	-64	-244
AMERICA—									
Barbadoes	64	14	78	55	15	70	-9	-1	-8
Canada	2,195	811	3,006	2,126	818	2,944	-69	-7	-62
Jamaica	250	112	362	168	87	255	-82	-25	-107
Newfoundland	110	43	153	99	33	132	-11	-10	-21
Other Amer. B. Pos.	519	171	690	217	87	304	-302	-84	-386
Argentine Republic	28	16	44	68	26	94	40	10	50
Brazil	72	33	105	60	36	96	-12	-3	-9
Chile	69	21	90	59	24	83	-10	-3	-7
Mexico	43	18	61	42	23	65	-1	-5	-4
Peru	21	7	28	25	9	34	-4	-2	-6
U.S. of America	5,217	2,231	7,448	4,449	2,193	6,642	-768	-38	-806
Other Amcn. Cties.	301	141	442	370	189	559	69	48	117
POLYNESIA—									
Fiji	807	278	585	414	488	852	107	160	267
Friendly Islands	41	42	83	46	49	95	5	7	12
Papua	6	3	9	398	35	433	392	9	424
Other Polyn. B.P.	47	15	62	259	16	275	212	1	213
New Caledonia	131	95	226	178	169	347	47	74	121
New Hebrides	71	28	99	290	50	340	219	22	241
Samoa	43	42	85	70	54	124	27	12	39
Other Polyn. Islds.	51	35	86	251	68	319	200	33	233
S. Sea Ids. (so des.)	8,701	427	9,128	570	55	625	-8,131	-372	-8,503
At Sea	2,747	2,456	5,203	2,209	2,029	4,238	-538	-427	-965
Unspecified	4,642	3,280	7,922	16,418	14,050	30,468	11,776	10,770	22,546
Total	1,977,928	1,795,873	3,773,801	2,313,035	2,141,970	4,455,005	335,107	346,097	681,204

Including the Isle of Man.

* Note.— denotes decrease.

4. **Occupations.**—In the compilation of the results of the Census of 3rd April, 1911, the populations of the several States and Territories were tabulated according to occupation in the following classes:—

(i.) *Professional.* Embracing all persons not otherwise classed, mainly engaged in the government and defence of the country, and in satisfying the moral, intellectual, and social wants of its inhabitants.

(ii.) *Domestic.* Embracing all persons engaged in the supply of board and lodging, and in rendering personal services for which remuneration is usually paid.

(iii.) *Commercial.* Embracing all persons directly connected with the hire, sale, transfer, distribution, storage, and security of property and materials.

(iv.) *Transport and Communication.* Embracing all persons engaged in the transport of persons or goods, or in effecting communication.

(v.) *Industrial.* Embracing all persons not otherwise classed who are principally engaged in various works of utility, or in specialities connected with the manufacture, construction, modification, or alteration of materials so as to render them more available for the various uses of man, but excluding, as far as possible, all who are mainly or solely engaged in the service of commercial interchange.

(vi.) *Agricultural, Pastoral, Mineral, and other Primary Producers.* Embracing all persons mainly engaged in the cultivation or acquisition of food products, and in obtaining other raw materials from natural sources.

(vii.) *Independent.* Embracing all persons of independent means having no specific occupation.

(viii.) *Dependents.* Embracing all persons dependent upon relatives or natural guardians, including wives, children, and others, not otherwise engaged in pursuits for which remuneration is paid, and all persons depending upon private charity, or whose support is a burthen on the public revenue.

Particulars concerning the number contained in each of these classes and certain subdivisions thereof are given in the table hereunder:—

AUSTRALIAN POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO OCCUPATION.

(a) MALES.

Occupation. Description.	States.						Territories.		Total Cwealth
	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	N. Ter.	Fed. Cap. Ter.	
Class I. Professional—									
Engaged in government, defence, law, etc. ...	13,261	8,758	3,823	2,169	2,533	1,398	40	22	32,004
Ministering to religion, charity, health, education, etc. ...	23,502	17,849	7,580	4,475	4,213	1,952	33	30	59,634
Total Class I. ...	36,763	26,607	11,403	6,644	6,746	3,350	73	52	91,638
Class II. Domestic—									
Engaged in supplying board and lodging ...	9,531	6,541	3,599	1,875	2,669	875	24	3	25,120
Engaged in domestic service and attendance ...	9,364	7,078	2,755	1,543	1,650	614	103	8	23,115
Total Class II. ...	18,898	13,619	6,354	3,418	4,319	1,489	127	11	48,235
Class III. Commercial—									
Dealing in property and finance ...	14,157	12,922	4,078	3,484	2,382	1,152	7	6	38,188
Dealing in art and mechanic productions ...	6,614	6,057	1,928	1,475	1,010	427	1	...	17,512
Dealing in textile fabrics, dress & fibrous materials ...	8,690	7,644	2,957	2,039	1,271	747	1	3	23,352
Dealing in food, drinks, narcotics and stimulants ...	24,435	21,467	8,640	6,334	4,436	1,693	54	1	67,060

AUSTRALIAN POPULATION AT 3RD APRIL, 1911—Continued.

(a) MALES—Continued.

Occupation:	States.						Territories.		Total
Description.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	N. Ter.	Fed. Cap. Ter.	Cwealth
Class III. Commercial— <i>Continued.</i>									
Dealing in animals, animal and vegetable substances ...	8,222	6,966	2,093	1,934	1,356	518	8	1	21,098
Dealing in fuel and light ...	1,609	2,001	752	585	276	241	5	...	5,469
Dealing in metals and other minerals ...	2,923	2,753	1,067	1,377	749	259	...	...	9,126
General and undefined merchants and dealers	20,757	14,068	7,244	4,959	3,759	1,940	120	8	52,875
Speculators on chance events ...	575	444	104	9	79	58	...	...	1,263
Engaged in storage ...	296	106	42	108	60	6	...	...	548
Total Class III. ...	38,208	74,448	28,905	22,304	15,378	7,041	196	19	236,499
Class IV. Transport and Communication—									
Engaged in railway traffic ...	16,946	13,869	8,215	5,052	4,664	1,138	52	4	49,940
Engaged in traffic on roads ...	18,916	10,958	5,955	3,765	2,034	1,101	39	5	42,773
Engaged in traffic on seas and rivers ...	17,488	8,428	5,963	5,339	3,810	1,618	42	3	42,601
Engaged in postal, telegraph and telephone service ...	6,861	4,212	2,311	1,316	1,350	512	61	1	16,624
Messengers, etc. ...	156	162	77	51	42	38	...	...	526
Total Class IV. ...	60,367	37,629	22,521	15,523	11,900	4,407	194	13	152,554
Class V. Industrial—									
Working in art and mechanic productions	37,819	32,853	11,889	10,220	5,217	2,468	19	7	100,492
Working in textile fabrics, dress & fibrous materials ...	12,052	13,500	3,287	2,456	1,305	1,039	21	2	33,662
Working in food, drinks, narcotics & stimulants	16,585	13,900	9,953	3,710	2,255	1,409	15	2	47,829
Working in animal and vegetable substances, N.B.I. ...	4,690	4,774	1,760	987	457	222	...	3	12,893
Working in metals and other minerals ...	19,782	16,479	5,290	7,362	2,600	1,479	9	6	53,007
Working in fuel, light & other forms of energy .	4,631	3,114	637	846	622	250	1	4	10,105
Engaged in construction of buildings, roads, railways, etc. ...	44,408	30,841	14,088	11,337	6,103	4,316	40	71	111,704
Engaged in disposal of the dead or of refuse ...	2,309	1,856	797	498	451	219	3	...	6,133
Engaged in undefined industrial pursuits	29,645	24,000	9,248	6,469	5,033	3,308	100	115	77,918
Total Class V. ...	171,921	141,317	56,949	44,385	24,043	14,710	208	210	453,743
Class VI. Primary Producers—									
Engaged in agricultural pursuits ...	77,599	83,343	38,695	36,590	21,169	19,647	89	100	277,232
Engaged in pastoral pursuits ...	69,724	27,019	33,634	5,898	4,086	2,547	406	277	143,591
Engaged in capture, etc., of wild animals and their produce ...	1,981	995	819	328	245	379	8	13	4,768
Engaged in fisheries ...	1,524	873	1,631	434	2,921	204	208	...	7,796
Engaged in forestry ...	6,358	5,150	4,708	355	5,666	1,936	17	3	24,393
Engaged in water conservation and supply ...	2,406	1,623	1,287	781	583	71	11	1	6,763
Engaged in mining and quarrying ...	39,551	20,218	17,947	3,256	18,189	5,629	934	2	105,726
Total Class VI. ...	199,143	139,221	88,721	47,642	53,059	30,413	1,673	396	570,268

AUSTRALIAN POPULATION AT 3RD APRIL, 1911—Continued.

(a) MALES.—Continued.

Occupation. Description.	States.						Territories.		Total Cwealth
	N.S.W.	Vic.	Qld.	S. Aus.	W. Aus.	Tas.	Nor. Ter.	Fed. Cap.	
Class VII. Indefinite (of independent means)	5,507	4,546	2,027	981	478	436	9	5	13,989
Class VIII. Dependents— Dependent on natural guardians ...	264,887	200,852	98,010	61,388	43,578	33,340	231	268	702,554
Supported by voluntary and State contributions	830	1,331	302	858	303	289	3	4	3,920
Criminal Class (under legal detention)	14	174	47	29	32	1	2	...	299
Total Class VIII. ...	265,731	202,357	98,359	62,275	43,913	33,630	236	272	706,773
Unspecified ...	11,160	15,847	4,267	4,236	1,729	2,115	18	14	39,386
Grand total ...	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035

(b) FEMALES.

Class I. Professional— Engaged in Govern- ment, defence, law, etc. Ministering to religion, charity, health, educa- tion, etc. ...	519	470	251	84	161	61	1	2	1,549
	18,858	16,742	5,999	4,445	3,292	2,070	12	6	51,424
Total Class I. ...	19,377	17,212	6,250	4,529	3,453	2,131	13	8	52,973
Class II. Domestic— Engaged in supplying board and lodging ... Engaged in domestic ser- vice and attendance ...	13,691	11,606	6,814	2,908	3,698	1,108	13	4	39,342
	40,792	36,950	13,902	11,152	5,605	5,267	61	60	113,789
Total Class II. ...	54,483	48,556	20,216	14,060	9,303	6,375	74	64	153,131
Class III. Commercial— Dealing in property and finance ... Dealing in art and me- chanic productions ... Dealing in textile fa- brics, dress and fibrous materials ... Dealing in food, drinks, narcotics and stimu- lants ... Dealing in animals, ani- mal and vegetable sub- stances ... Dealing in fuel and light Dealing in metals and other minerals ... General and undefined merchants and dealers Speculators on chance events... Engaged in storage ...	2,847	2,880	636	597	318	244	...	2	7,524
	1,522	1,781	547	384	249	124	...	...	4,607
	4,824	4,627	1,814	1,495	896	457	...	...	14,113
	2,714	3,395	962	747	497	247	...	...	8,562
	353	321	110	68	67	32	...	...	951
	31	40	13	7	9	...	...	...	100
	159	296	61	63	52	33	...	...	664
	5,652	3,817	1,505	1,312	811	520	...	1	13,618
	5	5	9	1	7	14	...	...	41
	5	1	2	...	...	...	...	...	8
Total Class III. ...	18,112	17,163	5,659	4,674	2,906	1,671	...	3	50,188

AUSTRALIAN POPULATION AT 3RD APRIL, 1911—Continued.

(b) FEMALES—Continued.

Occupation. Description.	States.						Territories.		Total Cwealth
	N.S.W.	Vic.	Qld.	S. Aus.	W. Aus.	Tas.	Nor. Ter.	Fed. Cap. Ter.	
Class IV. Transport and Communication—									
Engaged in railway traffic ...	259	264	307	13	9	36	...	1	889
Engaged in traffic on roads ...	61	89	25	21	5	8	...	...	209
Engaged in traffic on seas and rivers ...	146	94	51	36	41	17	...	...	385
Engaged in postal, telegraph and telephone service ...	1,131	1,159	237	277	271	270	...	5	3,350
Messengers, etc. ...	...	3	1	...	...	...	...	...	4
Total Class IV. ...	1,597	1,609	621	347	326	331	...	6	4,837
Class V. Industrial—									
Working in art and mechanic productions ...	3,327	3,451	697	609	279	123	...	...	8,476
Working in textile fabrics, dress and fibrous materials ...	28,992	37,523	9,939	7,087	3,482	2,291	3	4	89,321
Working in food, drinks, narcotics and stimulants ...	2,472	2,959	507	307	123	94	1	...	6,463
Working in animal and vegetable substances, N.E.I. ...	265	317	9	6	7	4	...	...	608
Working in metals and other minerals ...	275	223	34	30	10	2	...	...	574
Working in fuel, light, and other forms of energy ...	45	295	12	13	6	4	...	...	375
Engaged in construction of buildings, roads, railways, etc. ...	23	35	22	12	5	4	...	...	106
Engaged in disposal of the dead or of refuse ...	10	16	6	2	1	...	...	...	35
Engaged in undefined industrial pursuits ...	679	1,637	97	115	72	36	...	...	2,636
Total Class V. ...	36,093	46,456	11,313	8,181	3,985	2,558	4	4	108,594
Class VI. Primary Producers—									
Engaged in agricultural pursuits ...	1,636	2,809	1,091	1,005	397	521	...	9	7,468
Engaged in pastoral pursuits ...	3,266	2,321	2,065	389	114	88	12	15	8,270
Engaged in capture, &c., of wild animals and their produce ...	9	7	6	1	1	1	...	...	25
Engaged in fisheries ...	4	...	3	...	3	...	...	...	10
Engaged in forestry ...	6	1	1	...	2	...	...	...	12
Engaged in water conservation and supply ...	6	4	4	2	1	...	...	...	17
Engaged in mining and quarrying ...	23	21	13	9	10	2	...	...	78
Total Class VI. ...	4,950	5,163	3,183	1,405	528	614	12	24	15,880
Class VII. Indefinite (of independent means) ...	3,401	3,507	731	761	272	443	...	1	9,116
Class VIII. Dependents—									
Dependent on natural guardians ...	649,181	517,039	227,193	165,646	99,171	78,880	471	612	1,738,493
Supported by voluntary and State contributions ...	998	1,738	509	751	380	291	2	...	4,667
Criminal class (under legal detention) ...	3	3	9	35	8	...	...	...	53
Total Class VIII. ...	650,480	518,780	227,711	166,432	99,554	79,171	473	612	1,743,213
Unspecified ...	543	1,514	623	810	222	326	...	...	4,038
Grand total ...	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970

AUSTRALIAN POPULATION AT 3RD APRIL, 1911—Continued.

(c) PERSONS.

Occupation. Description.	States.						Territories.		Total Cwealth
	N.S.W.	Vic.	Qld.	S. Aus.	W. Aus.	Tas.	Nor. Ter.	Fed. Cap. Ter.	
Class I. Professional— Engaged in Government, defence, law, etc. ...	13,780	9,328	4,074	2,253	2,694	1,459	41	24	33,553
Ministering to religion, charity health, educa- tion, etc. ...	42,360	34,591	13,579	8,920	7,505	4,022	45	36	111,058
Total Class I. ...	56,140	43,919	17,653	11,173	10,199	5,481	86	60	144,611
Class II. Domestic— Engaged in supplying board and lodging ...	23,225	18,147	9,913	4,783	6,367	1,983	37	7	64,462
Engaged in domestic service and attendance	50,156	44,028	16,657	12,695	7,255	5,881	164	68	136,904
Total Class II. ...	73,381	62,175	26,570	17,478	13,622	7,864	201	75	201,366
Class III. Commercial— Dealing in property and finance ...	17,004	15,902	4,714	4,081	2,700	1,396	7	8	45,712
Dealing in art and mechanic productions	8,136	7,838	2,475	1,859	1,259	551	1	...	22,119
Dealing in textile fa- brics, dress and fibrous materials ...	13,514	12,271	4,771	3,534	2,167	1,204	1	3	37,465
Dealing in food, drinks, narcotics and stimu- lants ...	27,149	24,862	9,602	7,081	4,933	1,940	54	1	75,622
Dealing in animals, animal and vegetable substances, N.E.I. ...	8,575	7,287	2,203	2,002	1,423	550	8	1	22,049
Dealing in fuel and light	1,640	2,041	765	592	285	241	5	...	5,569
Dealing in metals and other minerals ...	3,082	3,049	1,128	1,440	801	292	...	...	9,792
General and undefined merchants and dealers	26,409	17,905	8,749	6,271	4,570	2,460	120	9	66,493
Speculators on chance events ...	580	449	113	10	86	72	...	...	1,310
Engaged in storage ...	231	107	44	108	60	6	...	...	556
Total Class III. ...	106,320	91,611	34,564	26,978	18,284	8,712	196	22	286,687
Class IV. Transport and Communication— Engaged in railway traffic ...	17,205	14,133	8,522	5,065	4,673	1,174	52	5	50,629
Engaged in traffic on roads ...	18,977	11,047	5,980	3,786	2,039	1,109	39	5	42,982
Engaged in traffic on seas and rivers	17,634	8,522	6,014	5,375	3,851	1,635	42	3	43,076
Engaged in postal, tele- graph and telephone service ...	7,992	5,371	2,548	1,593	1,621	782	61	6	19,974
Messengers, etc. ...	156	165	78	51	42	38	...	...	530
Total Class IV. ...	61,964	39,238	23,142	15,870	12,226	4,738	194	19	157,391

AUSTRALIAN POPULATION AT 3RD APRIL, 1911—Continued.

(c) PERSONS—Continued.

Occupation. Description.	States.						Territories.		Total Owealth
	N.S.W.	Vic.	Qld.	S. Aus.	W. Aus.	Tas.	Nor. Ter.	Fed. Cap. Ter.	
Class V. Industrial—									
Working in art and mechanic productions	41,146	36,304	12,576	10,829	5,496	2,591	19	7	108,968
Working in textile fabrics, dress and fibrous materials	41,044	51,023	13,226	9,543	4,787	3,330	24	6	122,983
Working in food, drinks, narcotics and stimulants	19,057	16,859	10,460	4,017	2,378	1,503	16	2	54,292
Working in animal and vegetable substances, N.E.I.	4,955	5,091	1,769	993	464	226	...	3	13,504
Working in metals and other minerals	20,057	16,702	5,324	7,392	2,610	1,481	9	6	53,581
Working in fuel, light, and other forms of energy	4,676	3,409	649	859	628	254	1	4	10,480
Engaged in construction of buildings, roads, railways, etc.	44,436	30,876	14,110	11,849	6,108	4,320	40	71	111,810
Engaged in disposal of the dead or of refuse	2,319	1,872	803	500	452	219	3	...	6,168
Engaged in undefined industrial pursuits	30,324	25,637	9,345	6,584	5,105	3,344	100	115	80,554
Total Class V.	208,014	187,773	68,262	52,566	28,028	17,268	212	214	562,337
Class VI. Primary Producers—									
Engaged in agricultural pursuits	79,235	86,152	39,786	37,595	21,566	20,168	89	109	284,700
Engaged in Pastoral pursuits	72,990	29,340	35,699	6,287	4,200	2,635	418	292	151,861
Engaged in capture of wild animals and their produce	1,990	1,002	825	329	246	380	8	13	4,793
Engaged in fisheries	1,528	873	1,634	434	2,924	204	208	...	7,805
Engaged in forestry	6,364	5,151	4,709	355	5,868	1,938	17	3	24,405
Engaged in water conservation and supply	2,412	1,627	1,291	783	584	71	11	1	6,780
Engaged in mining and quarrying	39,574	20,239	17,960	3,265	18,199	5,631	934	2	105,804
Total Class VI.	204,033	144,384	101,904	49,048	53,587	31,027	1,685	420	536,148
Class VII. Indefinite (of independent means)	8,908	8,053	2,758	1,692	750	879	9	6	23,055
Class VIII. Dependents—									
Dependent on natural guardians	914,368	717,891	325,203	227,034	142,749	112,220	702	880	2,441,047
Supported by voluntary and State contributions	1,826	3,069	811	1,609	683	530	5	4	8,587
Criminal class (under legal detention)	17	177	56	64	35	1	2	...	352
Total Class VIII.	916,211	721,137	326,070	228,707	143,467	112,801	709	884	2,449,986
Unspecified	11,703	17,361	4,890	5,046	1,951	2,441	16	14	43,424
Grand Total	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

5. **Religions.**—In the Act under which the Census of 1911 was taken in the several States, persons enumerated were required under penalty to furnish replies to all the inquiries contained in the schedule, with the exception of that relating to religion. In

this case, any person objecting to give such particulars was allowed to insert the words "Object to state" in the space provided for religion. Of the total population of 4,455,005 there were 83,003, or 1.86 per cent., who availed themselves of this option. There were also 36,114, or 0.81 per cent., concerning whom no particulars as to religion were obtained.

Of the remainder, 4,274,414, or 95.95 per cent., were members of the various Christian denominations, 36,785 were members of non-Christian religions, 14,673 were of indefinite religious belief, and 10,016 stated that they were of no religion.

Amongst the Christian denominations, that most numerous represented was the Church of England, with 1,710,443 adherents, the next in order being the Roman Catholic (921,425), the Presbyterian (558,336), the Methodist (547,806), the Baptist (97,074), the Congregational (74,046), the Lutheran (72,395), the Church of Christ (38,748), and the Salvation Army (26,665).

The principal non-Christian religions represented in Australia were the Hebrew, Confucian, Mohammedan and Buddhist, the members of the Hebrew congregation totalling 17,287.

Those included under the head of "Indefinite" in the attached table consist mainly of persons who stated that they were "Freethinkers" or "Agnostics," or returned themselves as being of "No Denomination," while under the head of "No Religion" are given those who were so returned on the schedules as well as a small number who stated that they were "Atheists."

AUSTRALIAN POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO RELIGION.

(Exclusive of Full-blooded Aborigines.)

(A). MALES.

Religion.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land	S.A.	W.A.	Tas.	N. Ter.	Fed. Cap. Ter.	
I. CHRISTIAN.									
Church of England...	380,324	225,601	114,958	57,377	60,707	44,845	448	374	884,634
Presbyterian ...	96,354	116,653	40,894	11,817	15,628	8,018	128	99	289,591
Methodist ...	75,512	84,376	30,309	49,067	17,928	12,311	67	71	269,641
Baptist ...	9,891	14,134	6,665	10,255	2,504	2,198	14	...	45,661
Congregational ...	10,888	7,624	5,137	6,196	3,171	2,339	11	1	35,367
Lutheran ...	4,824	7,025	13,038	14,100	1,846	144	16	...	40,993
Church of Christ ...	2,865	7,356	1,203	4,107	1,331	519	...	1	17,382
Salvation Army ...	3,475	3,409	2,049	1,777	919	693	...	...	12,322
Seventh Day Adventist	806	551	286	241	420	232	...	...	2,536
Unitarian ...	512	314	91	239	103	48	...	...	1,307
Protestant (undefined)	21,309	13,376	10,896	7,232	6,182	4,043	29	12	63,079
Roman Catholic ...	190,122	131,648	71,623	25,469	31,979	14,267	322	373	465,803
Greek Catholic ...	885	385	393	116	374	19	...	...	2,172
Catholic (undefined)	18,214	7,526	4,349	3,465	3,018	2,159	12	29	38,772
Others ...	4,503	3,811	4,038	1,367	1,006	1,067	3	1	15,796
Total ...	820,484	623,789	305,929	192,825	147,116	92,902	1,050	961	2,185,056
II. NON-CHRISTIAN.									
Hebrew ...	4,062	3,214	415	393	1,008	73	...	...	9,165
Confucian ...	1,198	744	1,553	28	336	47	1,130	...	5,036
Mohammedan ...	776	360	606	411	1,508	10	34	1	3,706
Buddhist ...	437	48	776	25	1,703	96	25	...	3,110
Pagan ...	254	500	525	2	130	8	3	...	1,422
Others ...	2,238	752	1,752	130	228	31	64	...	5,195
Total ...	8,965	5,618	5,627	989	4,913	265	1,256	1	27,634
III. INDEFINITE.									
Freethinker ...	873	648	571	188	393	72	7	1	2,753
No Denomination ...	328	677	159	166	157	79	2	...	1,568
Agnostic ...	845	752	408	150	332	52	6	1	2,546
Others ...	1,022	1,270	524	287	341	81	5	1	3,531
Total ...	3,068	3,347	1,662	791	1,223	284	20	3	10,398

AUSTRALIAN POPULATION AT THE 3RD APRIL, 1911—Continued.

(A.) MALES—Continued.

Religion.	States.						Territories.		C'wlth.
	N.S.W.	Vict.	Q'Ind.	S.A.	W.A.	Tas.	N. Ter.	Fed. Cap. Ter.	
IV. NO RELIGION.									
No Religion	2,228	1,931	1,485	731	993	158	31	2	7,559
Atheist	184	126	91	43	66	6	...	...	516
Others	59	53	19	13	15	5	...	...	164
Total	2,471	2,110	1,595	787	1,074	169	31	2	8,239
V. OBJECT TO STATE ...	14,969	14,212	8,981	9,930	4,547	3,008	86	13	55,766
VI. UNSPECIFIED	7,721	6,515	5,712	2,036	2,692	963	291	12	25,942
Grand Total	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035

(B) FEMALES.

I.—CHRISTIAN.									
Church of England	353,676	225,486	97,744	56,404	48,728	43,313	165	293	825,809
Presbyterian	86,557	117,900	34,666	10,750	11,050	7,717	16	89	268,745
Methodist	75,762	92,286	29,611	51,335	16,420	12,664	40	47	278,165
Baptist	10,788	17,110	7,050	11,608	2,297	2,559	1	...	51,413
Congregational	11,767	8,860	5,308	7,161	3,032	2,541	10	...	38,679
Lutheran	2,263	4,657	11,197	12,581	645	53	6	...	31,402
Church of Christ	3,547	9,155	1,360	5,217	1,477	608	1	1	21,366
Salvation Army	3,938	4,390	2,260	2,058	971	726	...	...	14,343
Seventh Day Adventist ...	1,193	892	346	351	465	282	...	...	3,559
Unitarian	332	198	56	215	41	25	1	...	368
Protestant (undefined) ...	15,595	10,740	7,506	6,003	3,789	3,130	9	10	46,782
Roman Catholic	185,269	140,106	65,463	25,495	24,637	14,314	92	246	455,622
Greek Catholic	198	88	101	34	34	19	...	...	474
Catholic (undefined) ...	18,408	7,153	3,643	3,129	2,328	1,921	6	19	36,607
Others	4,552	4,243	3,584	1,347	730	1,066	2	...	15,524
Total	773,845	643,264	269,895	193,718	116,644	90,938	349	705	2,089,358
II.—NON-CHRISTIAN.									
Hebrew	3,598	3,056	257	372	782	57	...	...	8,122
Confucian	6	4	41	...	9	...	98	...	158
Mohammedan	43	31	86	29	9	...	4	...	202
Buddhist	11	...	50	...	92	3	3	...	159
Pagan ... ..	...	1	10	1	13	...	...	...	25
Others	150	132	119	40	32	11	1	...	485
Total	3,808	3,224	563	442	937	71	106	...	9,151
III.—INDEFINITE.									
Freethinker	164	150	78	35	54	19	1	...	501
No Denomination	235	501	86	122	110	66	...	...	1,120
Agnostic	131	221	90	36	48	11	1	...	538
Others	613	1,005	181	151	120	46	...	...	2,116
Total	1,143	1,877	435	344	332	142	2	...	4,275
IV.—NO RELIGION.									
No Religion	446	504	298	217	181	40	6	...	1,692
Atheist	20	22	12	4	5	...	...	...	63
Others	15	5	1	...	...	1	...	...	22
Total	481	531	311	221	186	41	6	...	1,777
V.—OBJECT TO STATE ...	6,997	7,758	3,611	5,331	1,598	1,921	12	9	27,237
VI.—UNSPECIFIED ...	2,762	3,306	1,492	1,144	852	507	101	8	10,172
Grand Total	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970

**AUSTRALIAN POPULATION AT THE 3RD APRIL, 1911, CLASSIFIED
ACCORDING TO RELIGION—continued.**

(Exclusive of Full-blooded Aborigines.)

(c) PERSONS.

Religion.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land	S.A.	W.A.	Tas.	N. Ter.	Fed. Cap. Ter.	
I. CHRISTIAN.									
Church of England...	734,000	451,087	212,702	113,781	109,435	88,158	613	667	1,710,443
Presbyterian ...	182,911	234,553	75,560	22,567	26,678	15,735	144	188	558,336
Methodist ...	151,274	176,662	59,920	100,402	34,348	24,975	107	118	547,806
Baptist ...	20,679	31,244	13,715	21,863	4,801	4,757	15	...	97,076
Congregational ...	22,655	16,484	10,445	13,357	6,203	4,880	21	1	74,046
Lutheran ...	7,087	11,682	24,235	26,631	2,491	197	22	...	72,395
Church of Christ ...	6,412	16,511	2,563	3,324	2,808	1,127	1	2	38,748
Salvation Army ...	7,413	7,799	4,309	3,835	1,890	1,419	...	...	26,665
Seventh Day Adventist	1,999	1,443	632	622	885	514	...	...	6,095
Unitarian ...	844	512	147	454	144	73	1	...	2,175
Protestant (undefined)	36,904	24,116	18,402	13,235	9,971	7,173	38	22	109,861
Roman Catholic ...	375,391	271,754	137,086	50,964	56,616	23,531	414	619	921,425
Greek Catholic ...	1,083	473	494	180	408	38	...	...	2,646
Catholic (undefined)	36,622	14,679	7,992	6,594	5,346	4,080	18	48	75,379
Others ...	9,055	8,054	7,622	2,714	1,736	2,133	5	1	31,320
Total ...	1,594,329	1,267,053	575,824	386,543	263,760	183,840	1,399	1,666	4,274,414
II. NON-CHRISTIAN									
Hebrew ...	7,660	6,270	672	765	1,790	130	...	...	17,287
Confucian ...	1,204	748	1,594	28	345	47	1,228	...	5,194
Mohammedan ...	819	391	692	440	1,517	10	38	1	3,908
Buddhist ...	448	48	826	25	1,795	99	28	...	3,269
Pagan ...	254	501	535	3	143	8	3	...	1,447
Others ...	2,388	884	1,871	170	280	42	65	...	5,680
Total ...	12,773	8,842	6,190	1,431	5,850	336	1,362	1	36,785
III. INDEFINITE.									
Freethinker ...	1,087	798	649	223	447	91	8	1	3,254
No Denomination ...	563	1,178	245	288	267	145	2	...	2,688
Agnostic ...	976	973	498	186	380	63	7	1	3,084
Others ...	1,635	2,275	705	438	461	127	5	1	5,647
Total ...	4,211	5,224	2,097	1,135	1,555	426	22	3	14,673
IV. NO RELIGION.									
No Religion ...	2,674	2,435	1,783	948	1,174	198	37	2	9,251
Atheist ...	204	148	103	47	71	6	...	...	579
Others ...	74	58	20	13	15	6	...	...	186
Total ...	2,952	2,641	1,906	1,008	1,260	210	37	2	10,016
V. OBJECT TO STATE ...	21,986	21,970	12,592	15,261	6,145	4,929	98	22	83,003
VI. UNSPECIFIED ...	10,483	9,821	7,204	3,180	3,544	1,470	392	20	36,114
Grand Total ...	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

In the following table is given a comparison of the classification according to religion of the results of the Censuses of 1901 and 1911 :—

COMPARATIVE STATEMENT OF THE POPULATION OF THE COMMONWEALTH OF AUSTRALIA AT THE CENSUSES OF 1901 AND 1911, CLASSIFIED ACCORDING TO RELIGION.

(Exclusive of Full-blooded Aborigines.)

Religion.	Population of the Commonwealth.						Increase during 10 Years.		
	Census of 31st March, 1901.			Census of 3rd April, 1911.					
	Males.	Females	Persons.	Males.	Females	Persons.	Males.	Female	Persons.
I. CHRISTIAN.									
Church of England...	783,413	714,163	1,497,576	884,634	825,809	1,710,443	101,221	111,646	212,867
Presbyterian ...	221,801	204,504	426,105	289,591	268,745	558,336	67,990	64,241	132,231
Methodist ...	251,611	252,490	504,101	269,641	278,165	547,806	18,030	25,675	43,705
Baptist ...	42,662	46,676	89,338	45,661	51,413	97,074	2,999	4,737	7,736
Congregational ...	35,603	37,958	73,561	35,367	38,679	74,046	—	236	485
Lutheran ...	43,329	31,692	75,021	40,993	31,402	72,395	—	2,336	—
Church of Christ ...	11,265	12,927	24,192	17,382	21,366	38,748	6,117	8,439	14,556
Salvation Army ...	14,802	16,298	31,100	12,322	14,343	26,665	—	2,480	—
Seventh Day Advnt. ...	1,411	1,921	3,332	2,536	3,559	6,095	1,125	1,638	2,763
Unitarian ...	1,620	1,009	2,629	1,307	868	2,175	—	313	—
Protestant (undefined) ...	11,485	9,073	20,558	63,079	46,782	109,861	51,594	37,709	89,303
Roman Catholic ...	433,504	417,116	850,620	465,803	455,622	921,425	32,299	38,506	70,805
Greek Catholic ...	1,075	239	1,314	2,172	474	2,646	1,097	235	1,332
Catholic (undefined) ...	2,748	2,431	5,179	38,772	36,607	75,379	36,024	34,176	70,200
Others ...	10,944	10,879	21,823	15,796	15,524	31,320	4,852	4,645	9,497
Total ...	1,867,073	1,759,376	3,626,449	2,185,056	2,089,358	4,274,414	317,983	329,982	647,965
II.—NON-CHRISTIAN.									
Hebrew ...	8,137	7,102	15,239	9,165	8,122	17,287	1,028	1,020	2,048
Confucian ...	34,712	954	35,666	5,036	158	5,194	—	410	—
Mohammedan ...				3,706	202	3,908			
Buddhist ...				3,110	159	3,269			
Pagan ...	1,784	682	2,466	1,422	25	1,447	3,411	197	3,214
Others ...				5,195	485	5,680			
Total ...	44,633	8,738	53,371	27,634	9,151	36,785	—16,999	413	—16,586
III.—INDEFINITE.									
Freethinker ...	7,863	1,319	9,182	2,753	501	3,254	—	818	—
No Denomination ...	13,620	6,137	19,757	1,568	1,120	2,688	—	5,017	—
Agnostic ...	834	137	971	2,546	538	3,084	—	401	—
Others ...	638	463	1,101	3,531	2,116	5,647	2,893	1,653	4,546
Total ...	22,955	8,056	31,011	10,398	4,275	14,673	—12,557	—3,761	—16,338
IV.—NO RELIGION.									
No Religion ...	5,149	1,333	6,482	7,559	1,692	9,251	2,410	359	2,769
Atheist ...	245	29	274	516	63	579	271	34	305
Others ...	19	4	23	164	22	186	145	18	163
Total ...	5,413	1,366	6,779	8,239	1,777	10,016	2,826	411	3,237
V.—OBJECT TO STATE ...									
Total ...	28,443	13,688	42,131	55,766	27,237	83,003	27,323	13,549	40,872
VI.—UNSPECIFIED									
Total ...	9,411	4,649	14,060	25,942	10,172	36,114	16,531	5,523	22,054
Grand Total	1,977,928	1,795,873	3,773,801	2,313,035	2,141,970	4,455,005	335,107	346,097	681,204

Note. — indicates a decrease.

6. **Conjugal Condition.**—In the following tables particulars are given concerning the population of the several States and Territories on 3rd April, 1911, classified according to age and conjugal condition.

COMMONWEALTH POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND AGE.

(i.) NEVER MARRIED.

(a) MALES.

Age.	States.						Territories.		C'wealth
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North'n Terr.	F.C. Terr.	
Under 15	266,274	202,261	101,246	64,168	44,305	34,029	242	273	712,798
15 ...	15,980	13,081	6,380	4,124	2,209	1,885	17	13	43,689
16 ...	16,118	13,577	6,309	4,358	2,149	2,089	10	15	44,575
17 ...	16,841	13,640	6,541	4,260	2,392	1,976	18	24	45,692
18 ...	17,135	14,057	6,777	4,381	2,547	2,113	17	27	47,054
19 ...	16,506	13,235	6,539	4,312	2,452	1,850	16	16	44,926
20 ...	16,866	13,065	6,724	4,213	2,683	1,767	28	24	45,370
21 & under 25	57,867	42,075	23,313	14,675	10,684	5,759	96	78	154,547
25 ..	43,591	31,498	18,373	10,856	10,290	4,218	129	73	119,028
30 ..	24,109	17,720	10,658	5,363	7,142	2,163	128	37	67,320
35 ..	15,822	12,285	7,045	3,139	5,701	1,448	144	27	45,611
40 ..	12,549	10,070	5,897	2,347	4,629	1,119	236	10	36,847
45 ..	10,249	7,897	5,046	1,790	3,394	896	279	19	29,570
50 ..	8,085	5,430	3,968	1,407	2,072	644	295	14	21,915
55 ..	5,197	3,132	2,686	928	1,126	382	170	10	13,681
60 ..	3,850	2,204	1,984	624	702	236	118	9	9,727
65 ..	2,804	1,867	1,355	435	438	184	34	4	7,121
70 ..	2,270	1,696	971	267	277	123	26	5	5,635
75 ..	1,395	1,170	415	141	142	53	3	...	3,319
80 ..	532	571	134	53	64	26	...	1	1,386
85 & upwards	221	223	79	37	21	27	...	...	608
Unspecified	2,089	1,800	1,148	459	641	263	54	4	6,458
Total	556,350	422,604	223,578	132,342	106,060	63,200	2,060	683	1,506,877

(b) FEMALES.

Under 15	259,975	196,838	98,389	62,681	43,229	32,598	235	275	694,220
15 ...	15,831	13,194	6,216	4,104	2,022	1,921	12	24	43,324
16 ...	15,770	13,311	6,075	4,210	2,118	1,912	12	18	43,426
17 ...	15,817	13,382	6,107	4,219	2,163	1,916	11	22	43,637
18 ...	15,465	13,402	5,877	4,131	2,069	1,899	13	13	42,869
19 ...	14,208	12,672	5,337	4,049	1,918	1,675	8	14	39,881
20 ...	13,753	12,209	5,239	3,696	1,679	1,596	7	13	38,192
21 & under 25	41,739	37,119	14,930	11,126	4,901	4,577	19	29	114,440
25 ..	28,428	26,521	8,806	8,008	3,238	3,055	10	17	78,083
30 ..	15,893	16,354	4,491	4,148	2,011	1,690	10	7	44,604
35 ..	10,099	12,085	2,677	2,821	1,255	1,062	2	6	30,007
40 ..	6,883	9,214	1,606	1,995	794	825	2	7	21,326
45 ..	4,559	6,902	905	1,431	476	623	2	...	14,898
50 ..	3,060	4,572	608	940	298	460	...	...	9,938
55 ..	1,773	2,391	297	582	167	275	...	...	5,485
60 ..	1,297	1,409	220	335	107	205	...	1	3,574
65 ..	945	966	142	247	66	163	...	1	2,530
70 ..	504	539	97	154	31	94	...	...	1,419
75 ..	259	312	52	80	4	43	...	...	750
80 ..	101	150	23	47	6	21	...	...	348
85 & upwards	59	60	8	15	3	9	...	...	154
Unspecified...	1,185	1,255	377	311	252	174	3	4	3,561
Total	467,603	394,857	168,479	119,330	68,807	56,793	346	451	1,276,666

COMMONWEALTH POPULATION AT THE 3RD APRIL, 1911—Continued.

(ii.) MARRIED.

(a) MALES.

Age.	States.						Territories.		C'wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North'n Terr.	F. C. Terr.	
Under 15 ...	2	1	...	...	...	...	...	...	3.
15 ...	2	...	1	3	...	2	...	...	8
16 ...	9	4	6	3	1	2	...	...	25
17 ...	30	16	4	9	8	5	...	...	72.
18 ...	101	57	29	18	16	8	...	...	229
19 ...	256	137	62	54	12	33	1	...	555
20 ...	699	352	158	123	62	64	...	...	1,458
21 & under 25	11,504	6,240	3,313	2,508	1,240	1,200	16	1	26,022
25 " 30	32,188	20,069	10,484	8,043	5,077	3,433	22	17	79,333
30 " 35	39,083	26,557	13,413	9,506	8,237	4,306	42	37	101,181
35 " 40	37,919	28,022	13,832	8,912	9,133	4,319	62	40	102,539
40 " 45	36,530	31,054	13,507	8,739	8,738	4,230	94	30	102,922
45 " 50	34,102	31,120	12,758	8,022	6,739	4,020	91	36	96,888
50 " 55	28,425	24,182	10,179	7,512	4,648	3,381	103	31	73,461
55 " 60	19,569	14,455	6,620	5,700	2,608	2,312	52	33	51,349
60 " 65	13,400	9,779	4,499	3,753	1,635	1,578	58	14	34,716
65 " 70	9,680	7,396	3,485	2,855	1,061	1,116	17	16	25,626
70 " 75	5,801	5,411	2,248	1,650	558	675	10	11	16,364
75 " 80	3,212	3,684	1,032	857	258	365	4	4	9,416
80 " 85	1,095	1,626	314	391	89	168	1	1	3,685
85 & upwards	298	477	80	126	31	65	...	1	1,078
Unspecified...	1,523	1,111	522	318	251	188	2	4	3,919
Total ...	275,428	211,750	96,546	69,102	50,702	31,470	575	276	735,849

(b) FEMALES.

Under 15 ...	6	6	4	2	...	1	...	...	19
15 ...	51	12	19	4	1	5	...	...	92
16 ...	179	44	57	18	23	21	1	...	343
17 ...	479	216	165	76	63	54	2	...	1,055
18 ...	1,217	501	374	171	154	117	6	...	2,540
19 ...	1,907	939	646	343	268	238	5	1	4,347
20 ...	3,144	1,591	1,019	554	479	383	4	1	7,175
21 & under 25	23,887	14,109	8,118	5,211	3,468	2,693	11	16	57,513
25 " 30	43,113	28,595	14,459	10,367	7,049	4,727	36	24	108,370
30 " 35	42,598	31,290	14,377	10,294	8,293	4,753	37	36	111,678
35 " 40	38,382	30,541	13,319	8,977	8,189	4,097	32	32	103,569
40 " 45	33,446	30,266	11,908	8,543	6,555	3,793	31	33	94,575
45 " 50	28,723	27,318	9,902	7,601	4,546	3,406	20	27	81,548
50 " 55	22,037	19,793	7,423	6,083	2,777	2,803	10	19	60,945
55 " 60	14,173	11,316	4,424	4,258	1,649	1,743	6	16	37,585
60 " 65	9,535	7,368	3,020	2,856	973	1,096	3	8	24,859
65 " 70	6,177	5,163	2,189	1,826	551	724	1	9	16,630
70 " 75	3,191	3,196	1,201	1,015	253	361	1	7	9,225
75 " 80	1,370	1,662	449	483	88	175	...	...	4,227
80 " 85	397	578	127	150	15	59	...	...	1,326
85 & upwards	110	159	32	47	10	19	...	...	377
Unspecified...	2,089	1,812	682	506	376	305	1	4	5,775
Total ...	276,216	216,465	93,914	69,385	45,780	31,573	207	233	733,773

COMMONWEALTH POPULATION AT THE 3RD APRIL, 1911—Continued.

(iii.) WIDOWED.

(a) MALES.

Age.	States.						Territories.		C'wealth
	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	North'n Terr.	F. C. Terr.	
17 ...	1	...	...	...	...	...	...	...	1
18 ...	1	...	...	1	...	...	...	...	2
19 ...	1	...	...	...	...	...	...	...	1
20 ...	5	2	...	1	1	...	...	...	11
21 & under 25	90	60	41	19	19	6	...	...	235
25 " 30	435	281	138	104	78	40	...	...	1,076
30 " 35	762	525	306	166	208	79	2	1	2,049
35 " 40	1,108	860	444	219	350	111	3	3	3,098
40 " 45	1,556	1,230	611	357	498	166	7	2	4,427
45 " 50	2,014	1,827	888	465	578	203	13	3	5,991
50 " 55	2,567	2,111	974	609	579	312	10	3	7,165
55 " 60	2,622	1,768	923	614	434	303	15	5	6,684
60 " 65	2,652	1,790	955	580	438	284	8	4	6,711
65 " 70	2,810	2,131	1,031	711	364	273	3	6	7,329
70 " 75	2,496	2,266	1,031	635	285	239	2	1	6,955
75 " 80	2,027	2,396	649	530	173	255	...	1	6,031
80 " 85	1,034	1,688	319	368	99	144	1	1	3,704
85 & upwards	486	739	139	213	41	110	...	...	1,728
Unspecified...	170	146	62	35	35	28	1	...	477
Total ...	22,887	19,820	8,513	5,627	4,180	2,553	65	30	63,675

(iii.) WIDOWED.

(b) FEMALES.

15 ...	...	1	...	...	...	...	...	...	1
16 ...	1	...	...	...	1	...	...	...	2
17 ...	3	...	...	...	...	...	...	...	3
18 ...	5	2	...	2	...	...	...	...	9
19 ...	4	3	2	2	...	1	...	...	12
20 ...	16	19	7	2	6	4	...	...	54
21 & under 25	182	102	69	29	31	23	...	...	436
25 " 30	663	442	221	126	123	71	...	...	1,646
30 " 35	1,208	930	402	254	246	117	3	1	3,161
35 " 40	1,990	1,799	717	401	446	187	1	1	5,542
40 " 45	2,893	2,870	1,078	659	561	268	5	3	8,337
45 " 50	4,108	4,138	1,422	1,000	614	440	2	2	11,726
50 " 55	4,732	4,965	1,478	1,316	661	473	1	6	13,632
55 " 60	4,907	4,718	1,627	1,343	608	529	3	5	13,740
60 " 65	5,487	5,508	1,673	1,431	734	618	...	4	15,455
65 " 70	5,864	6,459	1,326	1,659	703	719	3	5	17,238
70 " 75	4,878	6,220	1,490	1,545	528	660	...	1	15,322
75 " 80	3,602	4,949	909	1,251	284	499	1	3	11,498
80 " 85	1,720	2,652	445	772	118	285	...	4	5,996
85 & upwards	895	1,235	254	430	59	143	...	2	3,018
Unspecified...	413	504	100	112	62	49	...	...	1,240
Total ...	43,571	47,516	13,720	12,334	5,785	5,086	19	37	128,068

COMMONWEALTH POPULATION AT THE 3RD APRIL, 1911—Continued.

(iv.) DIVORCED.

(a) MALES.

Age.	States.						Territories.		C'wealth.
	N.S.W.	V ictoria.	land.	S. Aust.	W. Aust.	Tas.	Nor. Terr.	F. C. Terr.	
19 ...	...	...	...	1	1	...	...	...	2
21 & under 25	11	5	5	2	3	1	...	...	27
25 " 30	66	32	16	7	10	3	...	...	134
30 " 35	149	63	33	9	21	5	...	...	280
35 " 40	162	69	35	10	32	7	...	...	315
40 " 45	181	89	26	17	33	8	...	...	354
45 " 50	199	109	37	13	30	11	...	...	399
50 " 55	184	82	28	8	21	8	1	...	332
55 " 60	112	46	7	8	17	10	...	...	200
60 " 65	71	30	9	10	9	2	...	...	131
65 " 70	44	14	6	4	4	3	...	...	75
70 " 75	20	17	1	1	2	...	...	1	42
75 " 80	7	3	1	1	...	...	...	...	12
80 " 85	6	7	...	...	...	...	...	...	13
85 & upwards	4	...	1	1	...	...	...	...	6
Unspecified	14	9	9	1	4	1	...	...	38
Total ...	1,230	575	214	93	187	59	1	1	2,360

(b) FEMALES.

18 ...	1	...	...	...	...	...	...	...	1
20 ...	3	4	...	...	...	...	...	...	7
21 & under 25	36	15	2	2	6	2	...	...	63
25 " 30	141	64	9	6	12	4	...	...	236
30 " 35	171	98	16	10	27	6	...	...	328
35 " 40	212	107	16	10	20	5	...	...	370
40 " 45	214	112	14	6	11	4	...	1	362
45 " 50	170	108	12	8	12	5	...	...	315
50 " 55	119	82	6	8	9	2	...	...	226
55 " 60	43	21	5	5	2	2	...	...	78
60 " 65	28	20	1	3	3	3	...	...	58
65 " 70	20	15	1	1	...	1	...	...	38
70 " 75	7	4	2	1	...	...	...	...	14
75 " 80	8	7	...	1	...	...	...	...	16
80 " 85	...	1	1	...	...	...	...	...	2
85 & upwards	1	...	...	...	...	...	...	...	1
Unspecified	16	7	...	1	1	...	...	...	25
Total ...	1,190	665	85	62	103	34	...	1	2,140

COMMONWEALTH POPULATION AT THE 3RD APRIL, 1911—Continued.

(v.) NOT STATED.

(a) MALES.

Age.	States.						Territories.		C'wealth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Territ'y	F. C. Terr.	
21 & under 25	272	96	44	23	21	46	6	1	509
25 " 30	150	75	42	10	32	37	5	...	351
30 " 35	125	63	35	13	38	17	3	...	289
35 " 40	110	72	55	7	35	26	4	...	309
40 " 45	124	69	55	8	25	32	3	1	317
45 " 50	74	62	40	10	17	27	1	...	231
50 " 55	84	61	53	7	25	23	6	...	259
55 " 60	44	35	35	3	14	12	1	...	144
60 " 65	50	31	27	4	4	15	...	...	131
65 " 70	32	24	12	1	2	5	...	...	76
70 " 75	24	25	9	2	2	4	1	...	67
75 " 80	17	22	6	...	3	5	...	...	53
80 " 85	2	11	1	1	2	3	...	...	20
85 & upwards	1	3	...	...	...	5	...	...	9
Unspecified	694	193	241	105	221	52	3	...	1,509
Total ...	1,803	842	655	194	436	309	33	2	4,274

(b) FEMALES.

15 ...	11	6	...	2	...	2	...	...	21
16 ...	13	4	3	3	...	...	...	...	23
17 ...	14	6	2	6	1	...	...	...	29
18 ...	20	12	7	6	1	2	...	...	48
19 ...	19	12	1	4	4	2	...	...	42
20 ...	19	22	7	3	4	3	2	...	60
21 & under 25	71	27	16	13	10	12	2	...	151
25 " 30	45	29	13	10	7	15	...	...	119
30 " 35	26	22	3	1	5	13	...	...	70
35 " 40	25	17	9	4	7	10	...	...	72
40 " 45	19	18	1	1	3	9	...	...	51
45 " 50	18	11	5	2	...	14	...	...	50
50 " 55	16	8	4	1	...	17	...	...	46
55 " 60	9	11	3	2	1	9	...	...	35
60 " 65	5	11	4	1	1	6	...	...	28
65 " 70	8	10	2	1	...	7	...	...	28
70 " 75	5	13	2	2	1	4	...	...	27
75 " 80	3	4	1	...	...	2	...	...	10
80 " 85	5	6	...	2	...	4	...	...	17
85 & upwards	5	6	1	1	...	1	...	...	14
Unspecified	100	202	25	24	29	2	...	...	382
Total ...	456	457	109	89	74	134	4	...	1,323

**SUMMARY OF PERSONS RECORDED IN EACH STATE AND TERRITORY OF
THE COMMONWEALTH AT THE CENSUS OF 3rd APRIL, 1911, CLASSIFIED
ACCORDING TO CONJUGAL CONDITION AND SEX.**

(Exclusive of Full-blooded Aborigines).

MALES.

Conjugal Condition.	States.						Territories.		Com- wealth.
	N.S.W.	Victoria	Q'land.	S. Aust.	W.Aust.	Tas.	North'n	Ed. Cap.	
Never married ...	556,350	422,604	223,578	132,342	106,060	66,200	2,060	683	1,506,877
Married ...	275,428	211,750	96,546	69,102	50,702	31,470	575	276	735,849
Widowed ...	22,887	19,820	8,513	5,627	4,180	2,553	65	30	63,675
Divorced ...	1,230	575	214	93	187	59	1	1	2,360
Not stated ...	1,803	842	655	194	436	309	33	2	4,274
Total ...	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035

FEMALES.

Never married ...	467,603	394,857	168,479	119,330	68,807	56,793	346	451	1,276,666
Married ...	276,216	216,465	93,914	69,385	45,780	31,573	207	233	733,773
Widowed ...	43,571	47,516	13,720	12,334	5,785	5,086	19	37	128,068
Divorced ...	1,190	665	85	62	103	34	...	1	2,140
Not stated ...	456	457	109	89	74	134	4	...	1,323
Total ...	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970

PERSONS.

Never married ...	1,023,953	817,461	392,057	251,672	174,867	119,993	2,406	1,134	2,783,543
Married ...	551,644	428,215	190,460	138,487	96,482	63,043	792	509	1,469,622
Widowed ...	66,458	67,336	22,233	17,961	9,965	7,639	84	67	191,743
Divorced ...	2,420	1,240	299	155	290	93	1	2	4,500
Not stated ...	2,259	1,299	764	283	510	443	37	2	5,597
Total ...	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

**COMPARATIVE STATEMENT OF THE POPULATION OF THE COMMONWEALTH
AT THE CENSUSES OF 1901 AND 1911, CLASSIFIED ACCORDING TO CONJUGAL
CONDITION AND SEX.**

(Exclusive of Full-blooded Aborigines).

Conjugal Condition.	Males.			Females.			Persons.		
	Census of 31st Mar., 1901.	Census of 3rd April, 1911.	In- crease during 10 yrs.	Census of 31st Mar., 1901.	Census of 3rd April, 1911.	In- crease during 10 yrs.	Census of 31st Mar., 1901.	Census of 3rd April, 1911.	In- crease during 10 yrs.
Never married ...	1,348,490	1,506,877	158,387	1,116,473	1,276,666	160,193	2,464,963	2,783,543	318,580
Married ...	563,919	735,849	171,930	568,340	733,773	165,433	1,132,259	1,469,622	337,363
Widowed ...	56,830	63,675	6,845	106,949	128,068	21,119	163,779	191,743	27,964
Divorced ...	1,228	2,360	1,132	1,147	2,140	993	2,375	4,500	2,125
Not stated ...	7,461	4,274	-3,187	2,964	1,323	-1,641	10,425	5,697	-4,828
Total ...	1,977,928	2,313,035	335,107	1,795,873	2,141,970	346,097	3,773,801	4,455,005	681,204

NOTE: — denotes decrease.

7. Education.—In the following table are contained particulars of the education of the population of the States and Territories of the Commonwealth as at the date of the Census of 3rd April, 1911. Of the total population of 4,455,005 there were 3,650,030, o

81.93 per cent., who were able to read and write in the English language, and 26,210, or 0.59 per cent., were able to read and write in a foreign language, though unable to read or write English.

EDUCATION OF THE POPULATION OF THE STATES AND TERRITORIES OF THE COMMONWEALTH OF AUSTRALIA

at the Census of 3rd April, 1911. (Exclusive of Full-blooded Aborigines.)

MALES.

States and Territories.	English Language.		Foreign Language only.		Cannot Read.	Not Stated.	Total.
	Read and Write.	Read Only.	Read and Write.	Read Only.			
STATES—							
New South Wales ...	696,258	2,565	5,889	497	134,215	18,274	857,691
Victoria ...	547,753	1,271	3,572	532	88,995	13,468	655,598
Queensland ...	265,896	1,136	6,185	678	49,406	6,205	329,506
South Australia ...	169,508	556	1,156	102	31,891	4,145	207,358
West Australia ...	128,648	311	4,371	303	22,524	5,408	161,565
Tasmania ...	76,247	456	181	20	18,244	2,443	97,591
TERRITORIES—							
Northern Territory ...	1,126	4	852	29	642	81	2,734
Fed. Cap. Territory ...	820	9	2	...	140	21	992
Total Commonwealth ...	1,886,256	6,308	22,208	2,161	346,057	50,045	2,313,035

FEMALES.

STATES—							
New South Wales ...	645,022	3,140	650	61	123,808	16,355	789,036
Victoria ...	555,675	2,626	665	66	84,449	16,479	659,960
Queensland ...	225,086	1,272	1,772	252	43,787	4,138	276,307
South Australia ...	165,634	993	531	88	29,987	3,967	201,200
West Australia ...	96,702	256	317	15	20,724	2,535	120,549
Tasmania ...	74,795	409	30	4	16,235	2,147	93,620
TERRITORIES—							
Northern Territory ...	292	...	37	...	203	44	576
Fed. Cap. Territory ...	568	5	...	...	132	17	722
Total Commonwealth ...	1,763,774	8,701	4,002	486	319,325	45,682	2,141,970

PERSONS.

STATES—							
New South Wales ...	1,341,280	5,705	6,539	558	258,023	34,629	1,646,734
Victoria ...	1,103,428	3,897	4,237	598	173,444	29,947	1,315,551
Queensland ...	490,982	2,408	7,957	930	93,193	10,343	605,813
South Australia ...	335,142	1,549	1,687	190	61,878	8,112	408,558
West Australia ...	225,350	567	4,688	318	43,248	7,943	282,114
Tasmania ...	151,042	865	211	24	34,479	4,590	191,211
TERRITORIES—							
Northern Territory ...	1,418	4	889	29	845	125	3,310
Fed. Cap. Territory ...	1,388	14	2	...	272	38	1,714
Total Commonwealth ...	3,650,030	15,009	26,210	2,647	665,382	95,727	4,455,005

From the following table, which gives for the Commonwealth as a whole particulars of education in conjunction with age, it will be seen that the major portion of those who were unable to read were under the age of 9. Of persons aged 20 and upwards only about $2\frac{1}{4}$ per cent. were unable to read.

**POPULATION OF THE COMMONWEALTH OF AUSTRALIA AT THE CENSUS OF
3rd APRIL, 1911, CLASSIFIED ACCORDING TO EDUCATION AND AGE.**

(Exclusive of Full-blooded Aborigines.)

MALES.

Age.	English Language.		Foreign Language only.		Cannot Read.	Not Stated.	Total.
	Read and Write.	Read only.	Read and Write.	Read only.			
0-4 ...	...	...	...	...	267,411	...	267,411
5-9 ...	177,463	1,131	53	24	39,764	11,151	229,586
10-14 ...	212,935	89	146	9	1,444	1,181	215,804
15-19 ...	221,279	109	800	46	1,813	2,784	226,831
20 and upwards	1,266,625	4,911	20,813	2,062	34,307	32,284	1,361,002
Unspecified ...	7,954	68	396	20	1,318	2,645	12,401
Total ...	1,886,256	6,808	22,208	2,161	346,057	50,045	2,318,035

FEMALES.

0-4 ...	...	...	...	...	258,222	...	258,222
5-9 ...	173,567	1,116	46	8	36,536	12,387	223,660
10-14 ...	209,904	75	95	6	1,062	1,215	212,357
15-19 ...	218,273	50	101	5	847	2,429	221,705
20 and upwards	1,153,611	7,375	3,735	462	21,819	28,041	1,215,043
Unspecified ...	8,419	85	25	5	839	1,610	10,983
Total ...	1,763,774	8,701	4,002	486	319,325	45,682	2,141,970

PERSONS.

0-4 ...	...	...	...	...	525,633	...	525,633
5-9 ...	351,030	2,247	99	32	76,300	23,538	453,246
10-14 ...	422,839	164	241	15	2,506	2,396	428,161
15-19 ...	439,552	159	901	51	2,660	5,213	448,536
20 and upwards	2,420,236	12,286	24,548	2,524	56,126	60,325	2,576,045
Unspecified ...	16,373	153	421	25	2,157	4,255	23,384
Total ...	3,650,030	15,009	26,210	2,647	665,382	95,727	4,455,005

8. School Attendances.—In the two following tables are set out particulars of (i. School attendances of children aged last birthday from 6 to 13 years, and (ii.) Population of the Commonwealth of Australia at the Census of 3rd April, 1911, classified according to schooling and age :—

(1).—SCHOOL ATTENDANCES OF CHILDREN AGED LAST BIRTHDAY FROM 6 to 13 YEARS

in the States and Territories of the Commonwealth of Australia at the Census of 3rd April, 1911.

(Exclusive of Full-blooded Aborigines.)

NOTE.—In this and the following table the term "State School" comprises all schools, whether primary or secondary, which are under the direct control of the State.

MALES.

States and Territories	Number being educated at			Number recorded as "scholar," but class of school not stated	Number not indicated as receiving instruction.	Total.
	State School.	Private School.	Home.			
STATES—						
New South Wales ...	91,979	19,107	3,436	3,809	11,574	129,905
Victoria ...	78,185	15,367	1,198	1,826	6,031	102,607
Queensland ...	38,167	5,184	1,517	904	5,089	50,861
South Australia ...	22,817	3,548	521	380	4,409	31,675
Western Australia ...	15,289	3,239	558	508	1,653	21,247
Tasmania ...	11,042	2,113	459	485	2,832	16,931
TERRITORIES—						
Northern Territory ...	32	25	9	1	56	123
Federal Capital Territory	98	...	22	4	25	149
Total Commonwealth ...	257,609	48,583	7,720	7,917	31,669	353,498

FEMALES.

STATES—						
New South Wales ...	84,129	23,329	4,191	3,279	12,802	127,730
Victoria ...	73,136	17,447	1,602	1,832	6,493	100,510
Queensland ...	35,656	6,765	1,713	1,032	4,759	49,925
South Australia ...	21,343	4,005	631	762	4,293	31,034
Western Australia ...	13,906	4,015	681	404	1,813	20,819
Tasmania ...	10,267	2,496	594	477	2,501	16,335
TERRITORIES—						
Northern Territory ...	32	20	6	...	69	127
Federal Capital Territory	85	3	13	5	27	133
Total Commonwealth ...	238,554	58,080	9,431	7,791	32,757	346,613

PERSONS.

STATES—						
New South Wales ...	176,108	42,436	7,627	7,088	24,376	257,635
Victoria ...	151,321	32,814	2,800	3,658	12,524	203,117
Queensland ...	73,823	11,949	3,230	1,936	9,848	100,786
South Australia ...	44,160	7,553	1,152	1,142	8,702	62,709
Western Australia ...	29,195	7,254	1,239	912	3,466	42,066
Tasmania ...	21,309	4,609	1,053	962	5,333	33,266
TERRITORIES—						
Northern Territory ...	64	45	15	1	125	250
Federal Capital Territory	183	3	35	9	52	282
Total Commonwealth ...	496,163	106,663	17,151	15,703	64,426	700,111

(II).—POPULATION OF THE COMMONWEALTH OF AUSTRALIA AT THE CENSUS OF
3rd APRIL, 1911, CLASSIFIED ACCORDING TO SCHOOLING AND AGE.

(Exclusive of Full-blooded Aborigines.)

MALES.

Age.	Number being Educated at—				Number Re- corded as "Scholar," but Class of School not Stated.	Number not Indicated as Receiving Instruction.	Total.
	State School.	Private School.	Home.	Uni- versity.			
Under 5 ...	4,760	1,349	170	...	167	260,965	267,411
5 ...	16,909	3,454	1,501	...	768	26,076	48,708
6 ...	29,703	5,818	1,732	...	1,010	9,533	47,796
7 ...	32,844	6,201	1,209	...	1,033	3,070	44,447
8 ...	34,483	6,293	1,081	...	999	1,797	44,653
9 ...	34,268	6,198	984	...	976	1,556	43,982
10 ...	35,343	6,252	802	...	1,025	1,495	44,917
11 ...	34,705	6,231	708	...	1,022	1,990	44,656
12 ...	30,169	5,866	598	...	983	3,062	40,678
13 ...	26,094	5,724	516	...	869	9,166	42,369
14 ...	11,747	4,793	331	...	607	25,706	43,184
15 ...	3,835	3,818	207	...	256	35,581	43,697
16 ...	1,380	2,724	122	30	134	40,210	44,600
17 ...	637	1,691	68	102	76	43,171	45,765
18 ...	384	1,062	68	259	64	45,448	47,285
19 ...	248	663	51	270	43	44,209	45,484
20 and upwards	276	1,827	164	1,262	78	1,357,393	1,361,002
Unspecified	599	181	28	3	183	11,407	12,401
Total ...	298,386	70,145	10,450	1,926	10,293	1,921,835	2,313,035

FEMALES.

Under 5 ...	4,313	1,499	150	...	137	253,123	258,922
5 ...	15,112	3,526	1,662	...	977	26,027	47,304
6 ...	26,938	6,274	2,045	...	1,016	10,115	46,388
7 ...	30,281	7,287	1,574	...	997	3,365	43,504
8 ...	32,341	7,398	1,233	...	1,062	1,898	43,932
9 ...	31,429	7,325	1,159	...	1,045	1,574	42,532
10 ...	32,877	7,752	1,031	...	953	1,526	44,139
11 ...	32,439	7,808	925	...	951	2,029	44,153
12 ...	28,830	7,247	764	...	939	3,160	40,940
13 ...	23,419	6,989	700	...	828	9,090	41,026
14 ...	11,792	5,794	531	...	604	23,379	42,100
15 ...	4,624	4,367	349	...	307	33,791	43,438
16 ...	1,819	3,376	198	43	203	38,155	43,794
17 ...	899	1,854	116	44	114	41,687	44,724
18 ...	520	993	72	74	98	43,710	45,467
19 ...	398	519	35	94	67	43,169	44,282
20 and upwards	376	731	28	284	820	1,213,904	1,215,043
Unspecified	512	211	21	...	161	10,078	10,983
Total ...	278,819	80,960	12,593	539	11,279	1,757,780	2 141,970

PERSONS.

Under 5 ...	9,073	2,848	320	...	304	513,088	525,633
5 ...	32,021	6,980	3,163	...	1,745	52,103	96,012
6 ...	56,641	12,092	3,777	...	2,026	19,648	94,184
7 ...	63,125	13,488	2,873	...	2,030	6,435	87,951
8 ...	66,824	13,691	2,314	...	2,061	3,695	88,585
9 ...	65,697	13,523	2,143	...	2,021	3,130	86,514
10 ...	68,220	14,004	1,833	...	1,978	3,021	89,056
11 ...	67,144	14,039	1,633	...	1,973	4,019	88,808
12 ...	58,999	13,113	1,362	...	1,922	6,222	81,618
13 ...	49,513	12,713	1,216	...	1,697	18,256	83,395
14 ...	23,539	10,587	862	...	1,211	49,085	85,284
15 ...	8,459	8,185	556	...	563	69,372	87,135
16 ...	3,199	6,100	320	73	337	78,365	88,294
17 ...	1,536	3,555	204	146	190	84,858	90,489
18 ...	904	2,055	140	333	162	89,158	92,752
19 ...	646	1,182	86	364	110	87,378	89,766
20 and upwards	554	2,558	192	1,546	898	2,570,297	2,576,045
Unspecified	1,111	392	49	3	344	21,485	23,384
Total ...	577,205	151,105	23,043	2,465	21,572	3,679,615	4,455,005

9. **Blind Persons and Deaf Mutes.**—The following table contains particulars of the number of blind persons and deaf mutes as recorded at the date of the Census of 1911:—

NUMBER OF BLIND PERSONS AND DEAF MUTES IN THE SEVERAL STATES OF THE COMMONWEALTH

at the Census of 3rd April, 1911. (Exclusive of Full-blooded Aborigines.)

States.	Blind.			Deaf and Dumb.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
New South Wales ...	591	420	1,011	330	310	640
Victoria ...	595	507	1,102	280	255	535
Queensland ...	213	170	383	160	97	257
South Australia ...	192	166	358	134	112	246
Western Australia ...	85	57	142	40	36	76
Tasmania ...	78	68	146	54	44	98
Total Commonwealth ...	1,754	1,388	3,142(a)	998	854	1,852(a)

(a) Including 21 blind deaf mutes.

§ II. Naturalisation.

1. **The Commonwealth Act.**—The Commonwealth Constitution empowers the Commonwealth Parliament to make laws with respect to "Naturalisation and Aliens," a power which was exercised when the "Naturalisation Act of 1903" was passed. This Act was assented to on 13th October of that year, and came into force on 1st January, 1904, in accordance with a proclamation by *Gazette* of 14th November, 1903.

Prior to the passing of this Act the issue of certificates of naturalisation had been a function of the State Governments, carried out under Acts of the several State Legislatures, which, however, did not differ materially from each other, and furnished the basis on which the Commonwealth Act was drafted. From 1st January, 1904, when the Commonwealth Act became operative, the right to issue certificates of naturalisation in the Commonwealth has been vested exclusively in the Federal Government, but all certificates or letters of naturalisation issued under the several State Acts prior to that date entitle the recipients to be deemed to be naturalised under the Commonwealth Act.

The grant of a certificate of naturalisation entitles the recipient within the limits of the Commonwealth to all the rights and privileges, and renders him subject to all the obligations, of a natural-born British subject, with the exception that where, by any Commonwealth or State Constitution or Act, a distinction is made between natural-born British subjects and naturalised persons, such distinction shall hold good in the case of all persons naturalised under the Commonwealth Act.

Applications for certificate of naturalisation must be made to the Governor-General, the qualifications required in an applicant being:—

(i.) That he is not a British subject.

(ii.) That he is not an aboriginal native of Asia, Africa, or the Islands of the Pacific, excepting New Zealand.

- (iii.) That he intends to settle in the Commonwealth.
- (iv.) (a) That he has resided in Australia continuously for two years immediately preceding naturalisation ; or
- (b) That he has obtained in the United Kingdom a certificate or letters of naturalisation.

An applicant who has already obtained a certificate or letters of naturalisation in the United Kingdom is required to furnish, in support of his application—

- (i.) His certificate or letters of naturalisation.
- (ii.) His statutory declaration—
 - (a) That he is the person named therein.
 - (b) That he obtained the certificate or letters without fraud or intentional false statement.
 - (c) That the signature and seal thereto are, to the best of his knowledge and belief, genuine.
 - (d) That he intends to settle in the Commonwealth.

If the applicant is not already naturalised in the United Kingdom the particulars which he is required to furnish in support of his application are as follows :—

- (i.) His own statutory declaration stating—
 - (a) Name ; (b) Age ; (c) Birthplace ; (d) Occupation ; (e) Residence ; (f) Length of residence in Australia ; (g) Intention to settle in the Commonwealth.
- (ii.) A certificate signed by a Justice of the Peace, a postmaster, a teacher of a State school, or an officer of police, that the applicant is known to him and is of good repute.

In connection with any application for naturalisation, the Governor-General in Council is authorised to grant or withhold a certificate as he thinks most conducive to the public good, but the issue of a certificate to any person who is not already naturalised in the United Kingdom is not admissible until the applicant has taken an oath or affirmation of allegiance. The grant of a certificate is made free of charge.

In addition to naturalisation by grant of certificate, the Act makes provision for—

- (i.) Naturalisation by marriage.
- (ii.) Naturalisation by residence with naturalised parent.

The former relates to the case of a woman who is not herself a British subject, but is married to a British subject ; the latter to that of an infant who is not a natural-born British subject, but who has resided at any time in Australia with a father or mother who is a naturalised British subject. In each instance the person concerned is deemed to be naturalised under the Commonwealth Act.

The administration of the Act is carried out by the Department of External Affairs, and the Governor-General is authorised to make such regulations as are necessary or convenient for giving effect to the Act.

2. Statistics of Naturalisation.—Particulars relative to the nationalities of the recipients of certificates of naturalisation issued under the Act during each of the five years 1907 to 1911, and to the countries from which such recipients had come, are shewn in the following table:—

COMMONWEALTH NATURALISATION CERTIFICATES GRANTED, 1907 to 1911.

Nationalities of Recipients.	No. of Certificates Granted.					Countries from which Recipients of Commonwealth Certificates had come.	No. of Certificates Granted.				
	1907.	1908.	1909.	1910.	1911.		1907.	1908.	1909.	1910.	1911.
German ...	365	475	1,091	694	813	Germany ...	296	381	948	567	676
Swedish ...	137	157	259	181	210	Great Britain ...	209	324	449	346	367
Italian ...	98	132	167	174	210	Italy ...	82	118	146	161	200
Russian ...	66	83	132	135	159	America (North)...	71	74	147	107	140
Danish ...	84	93	182	132	156	Denmark ...	44	66	106	76	100
Norwegian ...	59	65	138	107	103	Sweden ...	51	72	108	71	82
Greek ...	50	33	71	77	87	Norway ...	28	34	62	50	54
Austrian ...	28	45	63	56	76	South Africa ...	23	30	39	57	53
French ...	46	39	81	91	69	New Zealand ...	24	18	55	32	42
American (Nth.)	31	25	76	55	61	Greece ...	25	17	28	28	38
Swiss ...	38	36	70	51	42	Russia ...	11	21	35	40	37
Dutch ...	8	14	28	18	27	France ...	30	31	40	55	36
Spanish ...	8	11	24	24	26	Austria ...	13	23	24	28	29
Belgian ...	1	7	7	14	8	Switzerland ...	26	23	51	43	27
Portuguese ...	7	2	15	13	8	Egypt ...	23	19	31	22	26
Rumanian ...	1	9	3	3	7	Spain ...	7	15	18	25	25
Turkish ...	7	10	10	13	6	America (South)	...	...	...	...	24
Brazilian ...	1	1	5	...	2	Belgium ...	9	15	15	18	18
Bulgarian ...	1	1	1	3	2	India ...	...	...	...	...	13
Montenegrin ...	...	1	...	...	1	Pacific Islands ...	...	...	...	...	13
Chilian... ..	1	...	4	2	1	Turkey ...	...	...	6	7	11
Mexican ...	1	...	1	...	1	New Caledonia ...	...	...	...	...	10
South Sea Islds	...	...	...	...	1	Hong Kong ...	...	...	...	...	7
Syrian ...	...	...	...	...	1	Holland ...	...	...	19	...	6
Chinese ...	...	2	1	1	...	China ...	...	...	...	10	...
Servian ...	1	...	...	...	...	Mauritius ...	...	...	13	...	...
American (Sth.)	1	...	...	3	...	Other Countries...	77	68	94	113	43
Peruvian ...	1	...	...	1	...						
Uruguayan ...	1	...	...	...	...		
Icelandic ...	...	...	2	1	...						
Total ...	1,042	1,241	2,431	1,849	2,077	Total ...	1,042	1,241	2,431	1,849	2,077

The following table furnishes particulars concerning the States in which the recipients of Commonwealth certificates of naturalisation during the years 1904 to 1911 were resident. The numbers of certificates granted under the several State Acts during the years 1902 and 1903 are also given.

NATURALISATION CERTIFICATES GRANTED BY STATES AND COMMONWEALTH, 1902 to 1911.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W.A.	Tas.	C'wlth.
1902 ...	386	500	375	54	111	28	1,454
1903 ...	400	397	355	43	75	149	1,419
1904 ...	1,379	319	115	25	248	21	2,107
1905 ...	544	213	150	34	166	11	1,118
1906 ...	475	301	177	45	150	39	1,187
1907 ...	458	214	193	27	134	16	1,042
1908 ...	396	243	377	45	152	28	1,241
1909 ...	644	507	378	600	221	81	2,431
1910 ...	665	329	333	299	187	36	1,849
1911 ...	565	491	469	282	248	22	2,077

3. **Census Particulars.**—On the Personal Card used at the Census of 3rd April, 1911, an inquiry as to naturalisation was made, all persons who were British subjects by naturalisation being required to indicate the fact by inserting the letter N in the place provided for the purpose on the card. In addition, in checking the cards in the Census Bureau, instructions were given that cases of women naturalised by marriage to British subjects, and of children naturalised by residence with parents who have become British subjects, should be duly taken into account by the insertion of the letter N if originally omitted. The results of the tabulation will be found in the following table:—

NUMBER OF NATURALISED BRITISH SUBJECTS.

RECORDED AT THE AUSTRALIAN CENSUS OF 1911.

Particulars.	N.S.W.	Victoria	Qld.	S.Aust.	W.Aus.	Tas.	North. Terr.	Fed. Cap. Terr.	C'wlth.
Males ...	11,333	8,445	11,025	4,141	3,544	734	457	4	39,683
Females ...	2,808	2,182	5,562	1,763	646	293	18	1	13,268
Persons ...	14,141	10,627	16,587	5,904	4,190	1,027	470	5	52,951

§ 12. Graphical Representation of Growth of Population.

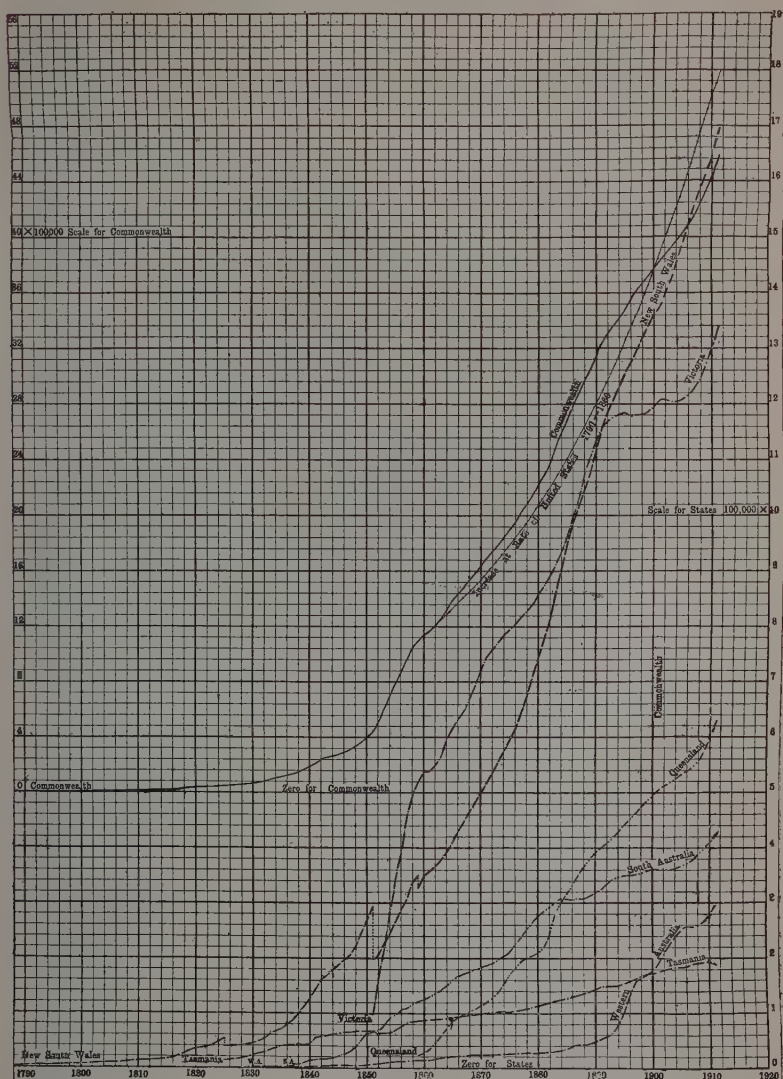
1. **General.**—The nature of the fluctuations of the numbers representing (a) total population, or those representing (b) births and deaths from year to year, or (c) the natural increase, i.e., the difference of births and deaths, or (d) the net immigration, all of which taken together make up the element of increase of total population, cannot be readily discerned from mere numerical tables. It has been deemed desirable therefore to furnish a series of graphical representations, shewing in some cases the characteristics of these elements from 1788 to 1911, and in others from 1860 to 1911. The graphs furnish at a glance a clear indication of the changes taking place, and of their significance from year to year. The great importance of such representations is that only by their means can the most recent changes be justly apprehended, either in their relation to the past, or their meaning for the future.

2. **Graphs of Total Population** (page 175).—These graphs furnish interesting evidence of the comparatively slow rate of growth of the several States and of the Commonwealth as a whole, during the period from the foundation of settlement in 1788 until 1832. From that year onwards to 1851, a moderately increased rate of progress was experienced. In 1851 gold was discovered in Australia, and the effect of this discovery on the population of the Commonwealth is shewn by the steepness of the curves for New South Wales and Victoria, and also for the Commonwealth, from this point onwards for a series of years. The sudden breaks in the continuity of the curves for New South Wales indicate the creation of new colonies, and their separation from the mother colony. Thus, Tasmania came into existence in 1825, Victoria in 1851, and Queensland in 1859. Owing to the extensive gold discoveries in Victoria, its population increased so rapidly that in 1854 its total passed that of New South Wales, and remained in excess until 1892, when the mother State again assumed the lead, which it has since maintained. The rate of increase in New South Wales is large, but the State is only sparsely populated. A feature of the New South Wales curve is its comparative regularity as compared with that of Victoria, the population of which State increased with great rapidity from 1851 to 1860, less rapidly from 1861 to 1878, with a further period of increased rapidity from 1878 to 1891, and a period of very slow and fluctuating growth from the latter year to 1911. Victoria, however, has a population density more than double that of Tasmania, and nearly three times that of New South Wales.

In the case of Queensland, the curve indicates a rate of growth which, though varying somewhat, has on the whole been satisfactory, and at times very rapid. Periods of particularly rapid increase occurred from 1862 to 1865, from 1873 to 1877, and from 1881 to 1889. The population of Queensland passed that of Tasmania in 1867, and that of South Australia in 1885. The population density of Queensland is less than one-sixteenth of that of Victoria.

The curve for South Australia indicates that with fluctuations more or less marked, the population increased at a moderate rate from the date of the foundation of the colony in 1834 until 1884, and that from that point onwards a diminished rate of increase

GRAPHS OF TOTAL POPULATION OF THE COMMONWEALTH OF AUSTRALIA AND EACH STATE THEREIN, 1788-1911.



(See Tables pages 119 to 121.)

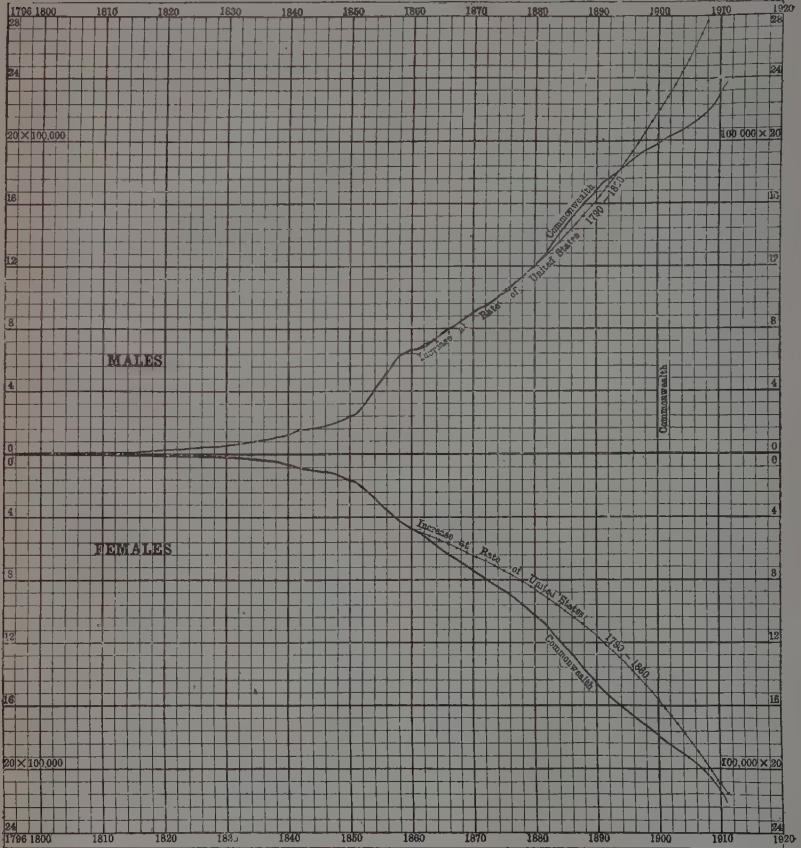
EXPLANATION OF GRAPHS.—The base of each small square represents two years' interval for both States and Commonwealth; and the vertical height 80,000 persons for Commonwealth or 20,000 for States. The zero line for the States is the bottom line; for the Commonwealth it is the line marked "Commonwealth." The scale on the left above the Commonwealth zero line relates to the Commonwealth, and that on the right relates to the States.

Where the population falls suddenly the fall denotes the creation of a new colony, e.g., New South Wales 1825, loses the whole population of Tasmania, then erected into a separate colony.

The curves are as follows:—Commonwealth, an unbroken line; New South Wales, — — — — —; Victoria, — — — — —; Queensland, — — — — —; South Australia, — — — — —; Western Australia, — — — — —; Tasmania, — — — — —; the names on the curves also shew which State each represents.

The manner in which the population of the Commonwealth would have grown from 1860 to 1911 if, during that period, there had been in operation the rate of increase actually experienced in the United States from 1790 to 1860, is shewn for purposes of comparison.

GRAPHS OF MALE AND FEMALE POPULATIONS, COMMONWEALTH OF
AUSTRALIA, 1796-1911.

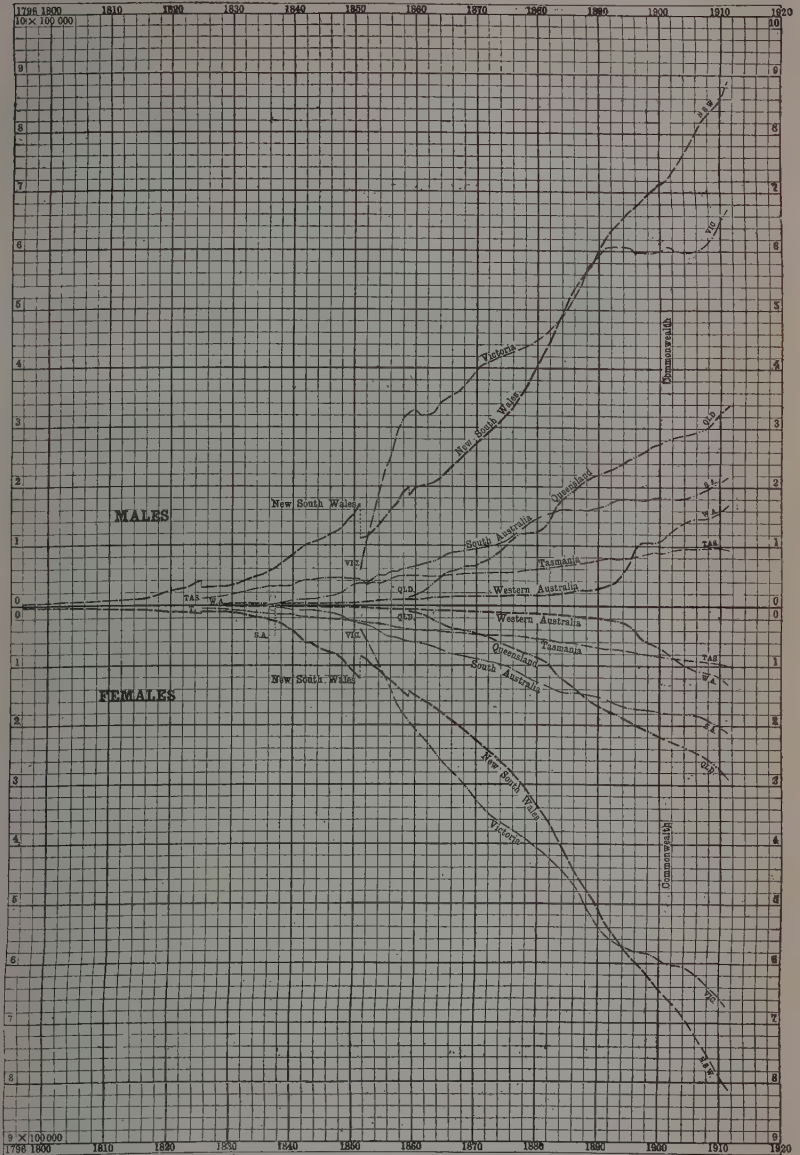


(See 'Tables pages 120 and 121.)

EXPLANATION OF GRAPHS.—The base of each small square represents two years' interval, and the vertical height 80,000 persons. The distances upward from the heavy zero line denote the number of males, and downward the number of females. From 1860 onward is shewn, for purposes of comparison, the manner in which the numbers of each sex in the Commonwealth would have grown from 1860 to 1908 (1911 for females), if, during that period, there had been in operation the rate of increase actually experienced in the United States from 1790 to 1860.

The asymmetry of the two graphs reveals the want of uniformity in the increase of the two sexes.

GRAPHS OF MALE AND FEMALE POPULATION OF THE STATES OF AUSTRALIA 1796-1911.



(See Tables pages 119, 140 and 141.)

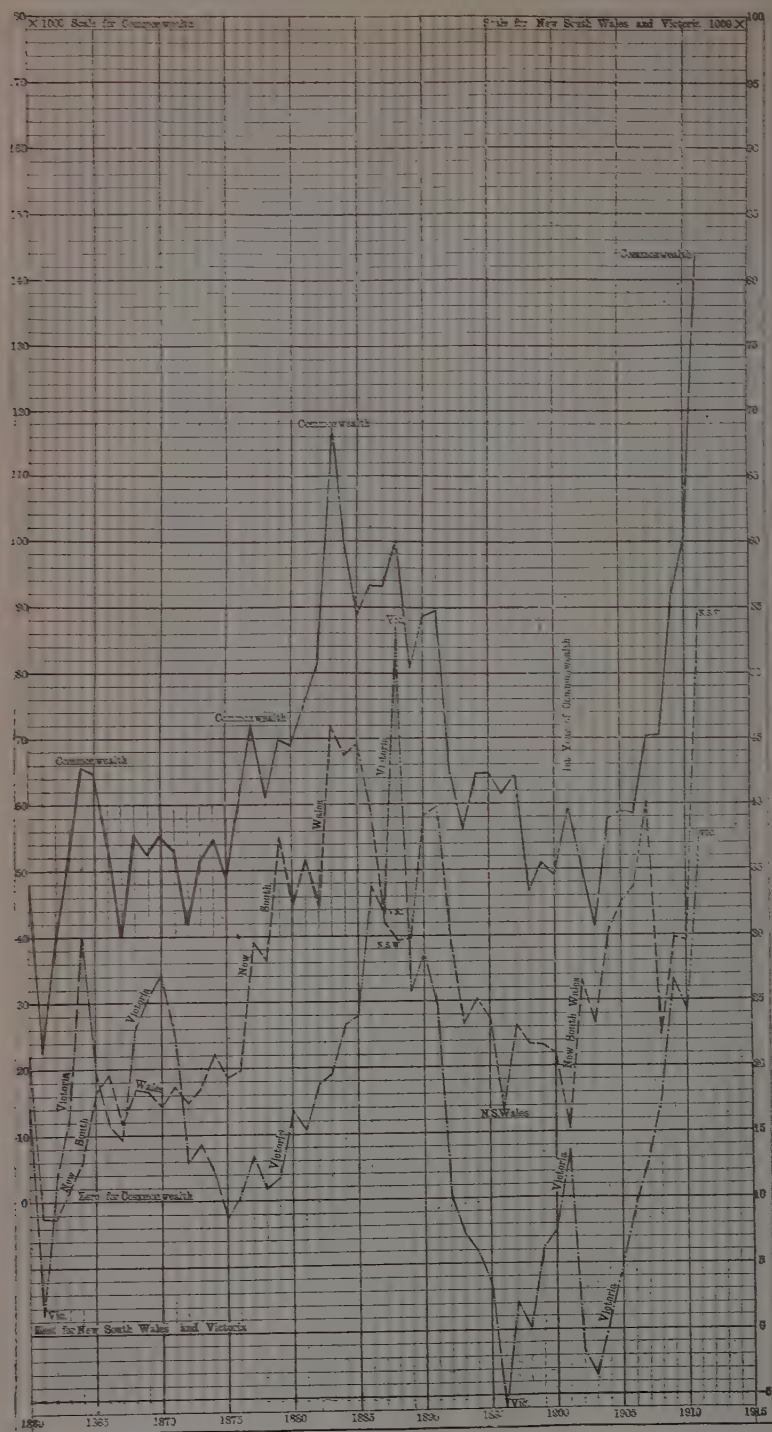
EXPLANATION OF GRAPHS.—The base of each small square represents two years' interval, and the vertical height 20,000 persons. The distances upward from the zero line represent the number of males, and downward the number of females.

The sudden falls denote the creation of new colonies.

The names on the curves denote the States to which they refer, and the curves are as follows:—New South Wales, — — —; Victoria, — — — —; Queensland, — — — — —; South Australia, — — — — —; Western Australia, — — — — —; Tasmania, — — — — —.

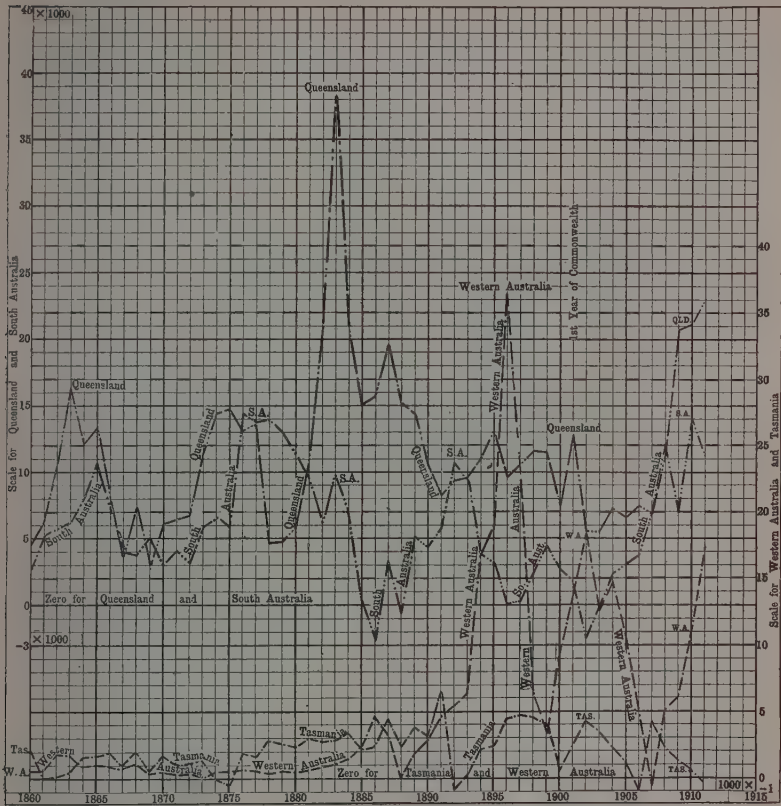
The asymmetry of the two series of graphs reveals the want of uniformity in the increase of the two sexes.

GRAPHS SHEWING NET INCREASE OF POPULATION OF THE COMMONWEALTH OF AUSTRALIA AND THE STATES OF NEW SOUTH WALES AND VICTORIA, 1860-1911.



(For explanation see foot of next page.)

GRAPHS SHEWING NET INCREASE OF POPULATION OF THE STATES OF QUEENSLAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1860-1911.



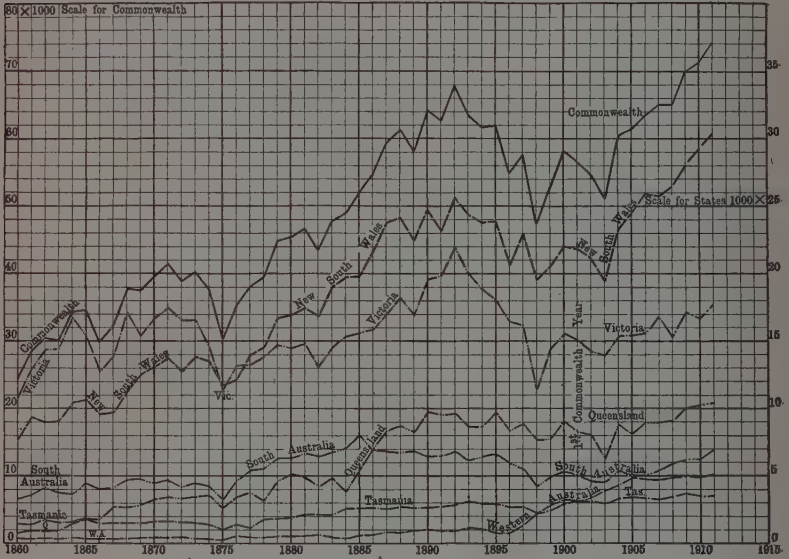
EXPLANATION OF GRAPHS SHEWING NET INCREASE.—The base of each small square represents an interval of a year for both States and Commonwealth; the vertical height represents 2000 for the Commonwealth and 1000 for the States. In the first graph two zero lines are taken (i.) for the Commonwealth and (ii.) for New South Wales and Victoria. The scale on the left relates to the Commonwealth and that on the right relates to New South Wales and Victoria. In the second graph two zero lines are taken (i.) for Queensland and South Australia, and (ii.) for Tasmania and Western Australia. The scale on the left relates to Queensland and South Australia, and that on the right relates to Tasmania and Western Australia.

NET DECREASES in population are shewn by carrying the graph in such cases below the zero line, the distance of the graph below the zero line indicating the extent of the decrease.

The lines used are as follows:—Commonwealth, an unbroken line; New South Wales, — — — —; Victoria, — — — —; Queensland, — — — —; South Australia, — — — —; Western Australia, — — — —; Tasmania, — — — —.

The names on the curves denote the States to which they refer.

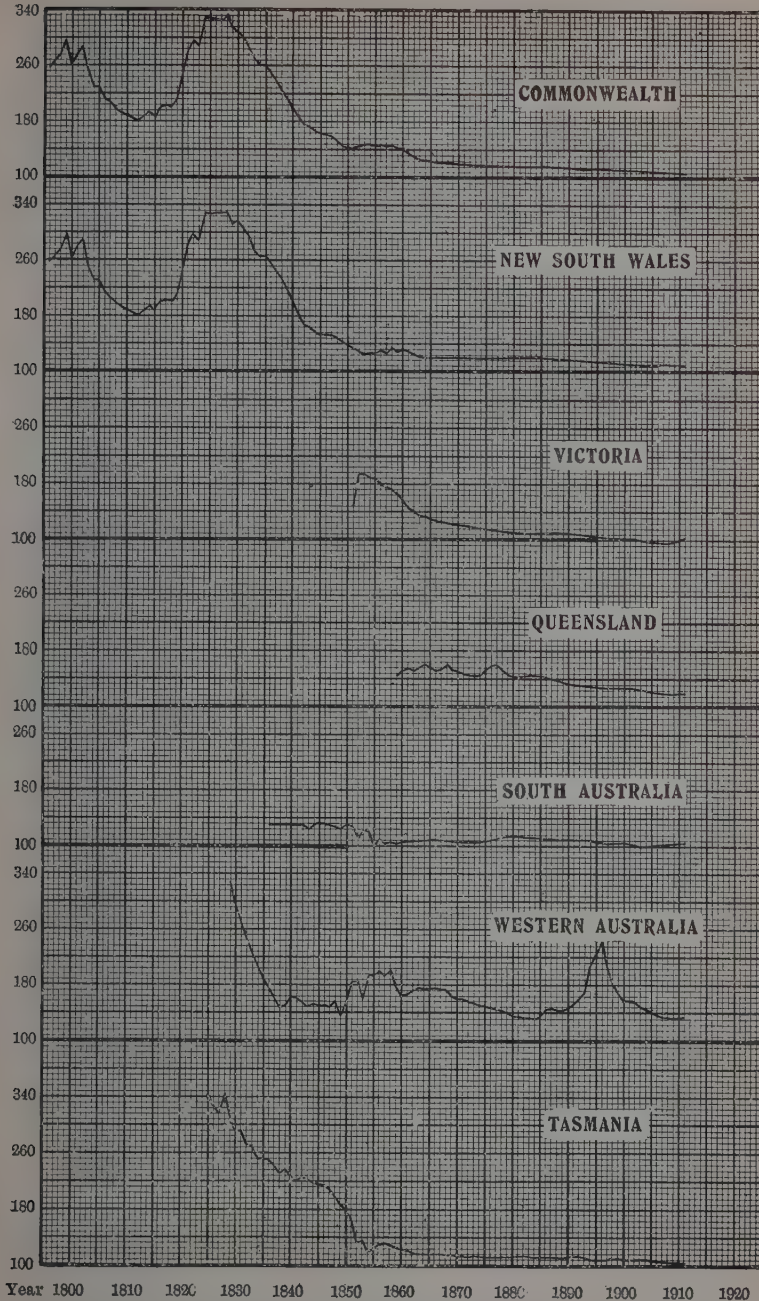
GRAPHS OF NATURAL INCREASE OF THE POPULATION OF THE COMMONWEALTH
AND STATES OF AUSTRALIA, 1860-1911.



EXPLANATION OF GRAPHS.—The base of each small square represents one year for both States and Commonwealth, and the vertical height 1000 persons for the States and 2000 persons for the Commonwealth.

The distances upward from the zero line, marked 0 for both Commonwealth and States, denote the excess of births over deaths. The scale on the left relates to the Commonwealth, and that on the right to the States. The names shew the States to which the curves refer, they are as follows:—Commonwealth — ; New South Wales, — — — ; Victoria, — — — — ; Queensland, — — — — — ; South Australia, — — — — — — ; Western Australia, — — — — — — — ; Tasmania, — — — — — — — — .

GRAPHS SHEWING MASCULINITY OF THE POPULATION OF THE
COMMONWEALTH AND STATES OF AUSTRALIA, 1796-1911.



(See Tables pages 105 and 122.)

EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year and the vertical height an excess of eight per cent. of males over females. The basic lines (shewn thickened) for Commonwealth and all the States are at 100 per cent., equivalent to a numerical equality of the sexes.

DISTRIBUTION OF POPULATION THROUGHOUT THE COMMONWEALTH OF AUSTRALIA, ACCORDING TO CENSUS OF 1911.

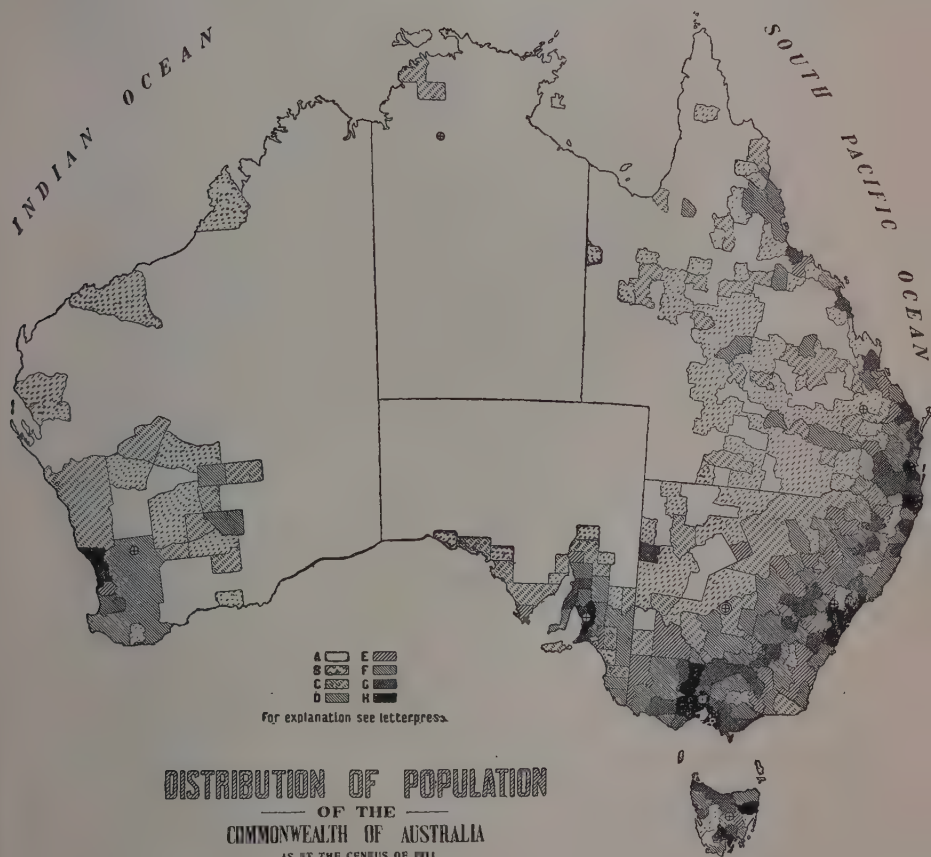
The map on page 183 furnishes a graphic representation of the distribution of the population of the Commonwealth at the date of the census of 1911. For this purpose the density of the population has been computed for the counties of each State, and the areas representing these counties have been shaded in accordance with the following scale of density:—

A—Less than 1 inhabitant to 16 sq. miles									
B—From 1 inhabitant in 16 sq. miles to less than 1 in 4 sq. miles									
C—	"	1	"	4	"	"	1 in 1 sq. mile		
D—	"	1	"	1 sq. mile	"	"	2 in 1 "	"	
E—	"	2 inhabitants in 1	"	"	"	"	4 in 1 "	"	
F—	"	4	"	1	"	"	8 in 1 "	"	
G—	"	8	"	1	"	"	16 in 1 "	"	
H—16 inhabitants and upwards in 1 square mile									

A map drawn upon such a small scale must, of course, be considered as furnishing only a rough approximation as to the true distribution of the population, owing to the fact that a small densely-populated area may exist in certain cases within a comparatively large district, the balance of which is but sparsely populated. Thus, in such a case, owing to the density of the whole district being alone taken into account, the fact of a concentration of population within a small area is lost for purposes of representation. It is evident that the larger the district is for which the density has been calculated, the less will the map represent the true facts. It is, however, believed that by the calculations being made in each State for counties this feature has been minimised, as the areas of the counties of New South Wales, Victoria, Queensland, South Australia, and Tasmania are fairly equal in area, and do not average much more than 2000 square miles. The areas of counties in the Northern Territory and in Western Australia average 4000 and 8000 square miles respectively. It is evident that, so far as the States of Queensland, Western Australia, and Tasmania are concerned, the map now published cannot be compared with the map contained in previous issues of this Year Book, as the density had been computed for that map for Registration Districts in Queensland, Magisterial Districts in Western Australia, and Electoral Districts in Tasmania.

An area of about 1,136,000 square miles, equal to 38 per cent. of the total area of the Commonwealth, and belonging to South Australia, Western Australia, and the Northern Territory, is not subdivided into counties. As the total population of that area is under 5000, it appears white on the map, together with a considerable number of adjoining counties, in which the population is less than one inhabitant to 16 square miles.

The concentration of population about the capitals, and, to a lesser extent, about some mining and agricultural centres, is obvious on reference to the map. The centres of gravity of the population of the several States and of the Commonwealth as a whole have been ascertained, and are shown in the map by crosses surrounded by circles. It is evident that the greater the percentage of the population of a State concentrated in the immediate neighbourhood of its capital, the closer to the capital the centre of gravity will be located, and the map shows this plainly. The centre of gravity of the population of the whole Commonwealth lies within the State of New South Wales, in county Nicholson, practically on the parallel of Sydney and the meridian of Melbourne, and almost in the centre of a straight line joining Sydney and Adelaide.



was experienced. The population of South Australia passed that of Tasmania in 1852. Its density is nearly one and one-fifth of that of Queensland, about one-fifth of that of New South Wales, and about one-sixteenth of that of Victoria.

The curve for Western Australia indicates that the population increased regularly but very slowly until 1886, when the discovery of gold in the Kimberley division caused an influx of population. The effects of the further rich discoveries of gold in the Murchison and Coolgardie districts in 1891 and 1892, are clearly shewn in the rapid increase of population in those and subsequent years to 1897. Two years of retarded progress then occurred, followed by a satisfactorily rapid rate of increase from 1899 to 1906, a slight decline in 1907 and a further advance in 1908, 1909, 1910, and 1911. The population of Western Australia became greater than that of Tasmania in 1899. Its density is little more than one-fourth of that of South Australia, one-third of that of Queensland, one-nineteenth of that of New South Wales, and about one-fiftieth of that of Victoria.

The Tasmanian population curve indicates a comparatively slow rate of growth throughout. Its most noticeable feature is a retardation in increase in 1852 and subsequent years, brought about by the discovery of gold on the mainland. The population density of Tasmania is nearly 40 per cent. greater than that of New South Wales, and a little less than half of that of Victoria.

3. Graphs for Commonwealth of Male and Female Population (page 176). These curves shew the relative growth of male and female population of the Commonwealth, and it will be seen that the former are far more liable to marked fluctuations than the latter. The curves representing an increase of population on the basis of the United States rate for 1790 to 1860, indicate that on the whole the female rate of increase in the Commonwealth has been a fairly satisfactory one, and that from 1860 to 1893 the same might be said of the male population. From 1893 onwards, however, the male population of the Commonwealth has fallen considerably below this rate, and it may be added that the rapid lowering of the rate of increase of the male population must be regarded as unsatisfactory from a national standpoint.

Although the rate of increase of the female population from 1860 onwards is on the whole very satisfactory, it should be noted that the total number at the beginning of this period was relatively very small, and that from 1894 there is an unsatisfactory falling off in the rate of increase, similar to that experienced in the case of males.

4. Graphs for each State of Male and Female Population (page 177).—These graphs, shewing the relative progress in male and female population for each of the States, disclose the fact that in all cases the female population is much less liable to marked fluctuations than the male, and further, that in cases where rapid increases have taken place in the latter, a similar, but much more gradual, increase is in evidence in the former, commencing usually, however, somewhat later than in the case of the males. A comparison of the graphs of each of the States with that of the Commonwealth shews that the fluctuations in the latter case are smaller than in the former. This is largely due to internal migrations of the male element of the population, brought about by various causes, amongst which mining developments figure prominently.

5. Graphs for Natural Increase of Population, Commonwealth and States (page 180).—The graphs indicate that, with the exception of certain marked variations, the natural increase of the population of the Commonwealth, viz., the excess of births over deaths, advanced with fair rapidity from 1860 to 1892, in which year it attained its maximum, when, however, it fell rapidly till 1898. A subsequent rise to 1900 was followed by a continuous fall for the three years succeeding, viz., to 1903. The recovery shews a fairly rapid rise to 1909, during which year the natural increase was 16.35 per 1000 of mean population; 1910 shewed a very slight decrease, the rate falling to 16.29, while 1911 shewed an increase to 16.55. The years in which the natural increase of the Commonwealth was at its highest were 1865, 1871, 1881, 1892, 1900, 1909, and 1911; and the years of extraordinarily low rates of natural increase were 1866, 1875, 1882, 1898, and 1903. The low rate of 1898 was due in large measure to a phenomenally high

death rate experienced in practically all the States in that year, when an epidemic of measles was prevalent throughout the Commonwealth. The low rate of 1903 was brought about by the low birth rates and the high death rates which accompanied the drought of 1902-3, while the advance in the rate of natural increase since 1903 has been collateral with the marked improvement in material conditions experienced throughout the Commonwealth during that period.

6. Graphs shewing Net Increase of Population (pages 178 and 179).—The graphs disclose the fact that the most notable years of large net increases of population of the Commonwealth as a whole were 1864, 1877, 1883, 1888, 1909, 1910, and 1911. The highest increase was attained in 1911. The net increases for 1910 and 1911 were higher than for any year since 1888. The years in which low net increases were noticeable were 1861, 1867, 1872, 1878, 1889, 1893, 1898, and 1903.

The graph for New South Wales indicates a high net increase of population between 1876 and 1894, advancing to a maximum in 1883, and then declining to 1901. From the latter year onwards to 1907 an advance in the net increase was in evidence, followed by a decline in 1908, and a recovery in 1909, which was maintained in 1910.

Some features of the graph shewing the Victorian net increase are the height attained in 1864, 1870, 1888, and 1901, the smallness of the increase for the years 1861 and 1875, and the decreases for 1896 and 1903.

For Queensland it will be seen that the years of high net increases were 1862, 1875, 1883, 1895, 1901, 1909, 1910, and 1911, while the years in which these were at very low level were 1869, 1878, 1891, and 1903.

In South Australia the net increases were exceptionally high in 1865, 1876, 1883, 1892, 1908, and 1910, and correspondingly low in 1870, 1886, 1896, 1902, and 1903.

In Western Australia the net increase graph indicates no very marked advance until about 1884, from which it rises somewhat rapidly to 1886, and then declines to 1888. This is followed by an exceedingly rapid rise to 1896, and a subsequent fall to 1899, succeeded by a further rise to 1903, and a fall thereafter to 1907, followed by a rise to 1911.

In the case of the Tasmanian graph, indications of a very varied net increase are in evidence, the principal high points being those for the years 1887, 1891, 1897, 1902, and 1907, while actual decreases were experienced in 1874, 1875, 1892, 1906, and 1911.

7. Graphs shewing Masculinity of Population, Commonwealth and States (page 181).—These graphs furnish information concerning the variations which have taken place in the relative numbers of males and females in the populations of the Commonwealth and the several States during the years 1796 to 1911, and incidentally serve to indicate special features of growth in the respective populations. In general it will be noted that in recent years there has been a marked tendency towards a masculinity of 100, that is, to a condition in which the numbers of males and females in the population were equal, but that with the exception of Victoria in 1902 and subsequent years to 1910 the masculinity has never fallen below 100. The early experience of the Commonwealth exhibits a fairly rapid decline in masculinity to 1812, followed by an even more rapid rise to 1828 and a subsequent fall with more gentle slope to 1850. From 1850 onwards the decline in masculinity has been fairly continuous though subject to fluctuations. It should be noted that the marked variations of the earlier as compared with the later years have been due to a considerable extent to the fact that, owing to the smallness of the population, any considerable influx of male immigrants had a marked effect in increasing the masculinity of the population, while an influx of female immigrants tended to considerably reduce it. Two points of special interest in the graphs of the separate States are the maxima attained in 1852 in Victoria and 1896 in Western Australia, as the result of extensive male immigration consequent on the gold discoveries in the respective States.

SECTION V.

VITAL STATISTICS.

NOTE.—The rates quoted throughout this Section for the years 1901 to 1911 have been calculated in accordance with the corrected populations as determined by the results of the Census of 1911.

§ 1. Births.

1. **Male and Female Births, 1901 to 1911.**—The total number of male and female births registered in the Commonwealth during the years 1901 to 1911 is as shewn in the two tables hereunder:—

TOTAL MALE BIRTHS, COMMONWEALTH, 1901 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed. Cap. Territory.	C'wealth.
1901	19,149	15,876	7,281	4,665	2,946	2,570	22	...	52,509
1902	19,322	15,583	7,279	4,579	3,241	2,604	8	...	52,616
1903	18,377	15,115	6,427	4,464	3,433	2,570	20	...	50,406
1904	19,857	15,313	7,134	4,665	3,666	2,702	21	...	53,358
1905	20,206	15,523	6,978	4,491	3,862	2,812	23	...	53,895
1906	21,066	15,716	7,280	4,605	4,043	2,792	12	...	55,514
1907	21,604	15,986	7,451	4,675	3,962	2,797	14	...	56,489
1908	21,605	16,071	7,677	4,924	3,993	2,818	25	...	57,113
1909	22,464	16,096	7,954	5,224	3,884	2,849	11	...	58,482
1910	23,368	16,412	8,260	5,395	3,855	2,888	23	...	60,206
1911	24,383	16,934	8,703	5,615	4,124	2,716	16	(a) 17	62,508

(a) Part of New South Wales prior to 1911.

TOTAL FEMALE BIRTHS, COMMONWEALTH, 1901 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed. Cap. Territory.	C'wealth.
1901	18,726	15,132	7,022	4,414	2,772	2,360	10	...	50,436
1902	18,513	14,878	6,937	4,348	2,991	2,481	12	...	50,160
1903	17,589	14,454	6,194	4,011	3,266	2,510	13	...	48,037
1904	18,810	14,450	6,948	4,435	3,510	2,590	12	...	50,755
1905	19,295	14,584	6,648	4,341	3,720	2,445	13	...	51,046
1906	19,882	15,128	6,739	4,316	3,757	2,541	13	...	52,376
1907	20,597	15,379	7,089	4,536	3,750	2,494	13	...	53,858
1908	20,853	15,026	7,153	4,832	3,762	2,797	9	...	54,432
1909	21,318	15,448	7,598	4,840	3,718	2,651	16	...	55,589
1910	22,076	15,025	7,909	5,145	3,780	2,698	12	...	56,595
1911	23,154	16,092	8,281	5,442	3,967	2,721	15	(a) 13	59,685

(a) Part of New South Wales prior to 1911.

2. **Total Births, 1901 to 1911.**—While the total number of births for the Commonwealth was higher in 1911 than in any of the preceding ten years, the following table of particulars discloses also the fact that the excess of births in 1911 over those in 1901 was very unequally distributed between the States:—

TOTAL BIRTHS, COMMONWEALTH, 1901 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fd. Cp. Terr.	C'wealth.
1901 ...	37,875	31,008	14,303	9,079	5,718	4,930	32	...	102,945
1902 ...	37,885	30,461	14,216	8,927	6,232	5,085	20	...	102,776
1903 ...	35,966	29,569	12,621	8,475	6,699	5,080	33	...	98,448
1904 ...	38,667	29,763	14,082	9,100	7,176	5,292	33	...	104,118
1905 ...	39,501	30,107	13,626	8,832	7,582	5,257	36	...	104,941
1906 ...	40,948	30,844	14,019	8,921	7,800	5,333	25	...	107,890
1907 ...	42,201	31,365	14,540	9,211	7,712	5,291	27	...	110,347
1908 ...	42,458	31,097	14,830	9,756	7,755	5,615	34	...	111,545
1909 ...	43,782	31,544	15,552	10,064	7,602	5,500	27	...	114,071
1910 ...	45,444	31,437	16,169	10,540	7,585	5,586	40	...	116,801
1911 ...	47,587	33,026	16,984	11,057	8,091	5,437	31	(a) 30	122,198

(a) Part of New South Wales prior to 1911.

3. *Birth Rates, 1901 to 1911.*—(i.) *Crude Birth Rate.* The birth rate for the whole Commonwealth during 1911 was higher than in any of the preceding ten years, an uninterrupted increase having been experienced since 1907. New South Wales and South Australia are the only States in which an increase in the rate took place, as will be seen from the following table, which gives also the number of persons per square mile in each State. The very high masculinity of the population accounts for the low birth rate experienced in the Northern Territory :—

CRUDE BIRTH RATE (a), COMMONWEALTH, 1901 to 1911 (b).

Year.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	North. Terr.	Fed. Cap. Terr.	Cwth.
1901 ...	27.78	25.77	28.52	25.41	30.39	28.58	6.72	...	27.16
1902 ...	27.23	25.23	27.85	25.08	30.44	29.03	4.37	...	26.71
1903 ...	25.44	24.53	24.53	23.84	30.50	28.16	7.58	...	25.29
1904 ...	26.85	24.74	26.99	25.49	30.67	28.92	7.82	...	26.41
1905 ...	26.85	24.96	25.76	24.54	30.74	28.50	8.72	...	26.23
1906 ...	27.21	25.41	26.15	24.57	30.66	28.94	6.29	...	26.57
1907 ...	27.34	25.59	26.79	25.05	30.18	28.63	7.06	...	26.76
1908 ...	26.99	25.07	26.79	25.81	30.08	29.95	9.30	...	26.59
1909 ...	27.40	25.01	27.29	25.91	28.87	28.91	7.63	...	26.69
1910 ...	27.83	24.51	27.33	26.50	27.99	29.25	11.75	...	26.73
1911 ...	28.75	24.84	27.65	26.89	28.21	28.57	9.34	(d) 16.85	27.21
Density (c) (No. per square mile) ...	5.41	15.51	0.93	1.10	0.30	7.38	0.006	2.13	1.54

(a) Number of births per 1,000 of the mean annual population. (b) Rates corrected in view of Census Returns, 1911. (c) On 31st December, 1911. (d) Part of New South Wales prior to 1911.

The population density of each State and of the Commonwealth has been given for the purpose of considering the influence, if any, of concentration of population on birth rate, in connection with the disparities of the rate in different parts of Australia.

(ii.) *Objections to Crude Birth Rate.* The figures just given represent the "crude birth rate," i.e., the number of births per thousand of mean annual population. The number of births per thousand of the female population of child-bearing ages, i.e., from 15 to 45, would furnish a more significant rate. As the calculation has, for previous periods, been made so as to cover in each case the Census year together with the year immediately preceding and the year immediately following, the same practice will be adopted for the period surrounding the Census of 1911, and figures for the years 1910-1912 will be given in the next issue. The following results have been obtained for the preceding three Census periods:—Total births per 1000 women (married and unmarried) of ages 15 to 45 :—Years 1880-82, 169.69; years 1890-92, 158.81; years 1900-02, 117.26. Nuptial

births per 1000 married women of ages 15 to 45:—Years 1880-82, 320.96; 1890-92 332.03; years 1900-02, 235.84.

4. **Birth Rates of Various Countries.**—A comparison with other countries shews that the Australian States occupy a very low position, which is, however, fortunately counterbalanced by a still lower position in regard to their death rates, as will be seen from the table hereinafter in the section dealing with "Deaths."

CRUDE BIRTH RATE (a) OF VARIOUS COUNTRIES (b).

Country.	Year.	Rate.	Country.	Year.	Rate.
Russia, European ...	1905	44.8	Western Australia ...	1911	28.2
Bulgaria ...	1909	40.6	Queensland ...	1911	27.7
Rumania ...	1910	39.8	Denmark ...	1910	27.5
Ceylon ...	1910	39.0	Commonwealth ...	1911	27.2
Jamaica ...	1910	38.6	South Australia ...	1911	26.9
Chile ...	1910	38.4	Scotland ...	1910	26.2
Servia ...	1909	36.5	Norway ...	1910	26.1
Hungary ...	1910	35.7	New Zealand ...	1911	26.0
Japan ...	1909	34.2	Switzerland ...	1909	25.5
Spain ...	1910	33.1	England and Wales ...	1910	25.1
Italy ...	1910	32.9	United Kingdom ...	1910	25.0
Austria ...	1910	32.5	Canada (Ontario) ...	1910	24.9
German Empire ...	1909	31.1	Victoria ...	1911	24.8
Prussia ...	1910	30.5	Sweden ...	1910	24.8
Finland ...	1910	30.2	Belgium ...	1909	23.7
New South Wales ...	1911	28.8	Ireland ...	1910	23.3
Tasmania ...	1911	28.6	France ...	1910	19.7
Netherlands ...	1910	28.6			

(a) Number of births per 1000 of the mean population. (b) Rates corrected in view of Census Returns, 1911.

5. **Masculinity at Birth.**—The masculinity of births, i.e., the number of males per 100 females, registered during the last eleven years in the several States of the Commonwealth has varied from 99.82 in Tasmania in 1911 to 115.01 in Tasmania in 1905. The following table, which gives the values for the States and Commonwealth for 1901 to 1911, shews the remarkable fact that for the Commonwealth there was a steady increase of masculinity from 1901 to 1906, with a sharp decrease in 1907, a further increase in 1908, 1909, 1910, and a rapid decrease in 1911:—

MASCULINITY (a) OF BIRTHS REGISTERED, COMMONWEALTH, 1901 to 1911.

Year.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Fed. Cap. Territory.	C'wealth.
1901 ...	102.26	104.92	103.69	104.33	106.28	108.90	220.00	...	104.11
1902 ...	104.37	104.74	104.93	105.31	108.36	104.96	66.67	...	104.90
1903 ...	104.48	104.57	103.76	111.29	105.11	102.39	153.85	...	104.93
1904 ...	105.57	105.97	102.68	105.19	104.44	104.32	175.00	...	105.13
1905 ...	104.72	106.44	104.96	103.46	103.82	115.01	176.92	...	105.58
1906 ...	105.96	103.89	108.03	106.70	107.61	109.88	92.31	...	105.99
1907 ...	104.89	103.95	105.11	103.06	105.65	112.15	107.69	...	104.89
1908 ...	103.61	106.95	107.33	101.90	106.14	100.75	277.78	...	104.93
1909 ...	105.38	104.19	104.69	107.93	104.46	107.47	68.75	...	105.20
1910 ...	105.85	109.23	104.44	104.86	103.35	107.04	233.33	...	106.38
1911 ...	105.31	105.23	105.10	103.18	103.96	99.82	106.67	(b) 130.77	104.73

(a) Number of males to each 100 females. (b) Part of New South Wales prior to 1911.

There is ordinarily a very small difference between the masculinity of nuptial and ex-nuptial births. Thus, according to Bodio, whose figures are quoted in the following

table, for the period about 1887-1891, the masculinity ranged from 108.3 to 103.6, and from 107.9 to 101.6 for total and ex-nuptial births respectively.

MASCULINITY OF BIRTHS IN VARIOUS COUNTRIES.

Country.	Masculinity of Births. (a)		Country.	Masculinity of Births. (a)	
	All Live Births.	Ex-nuptial Live Births.		All Live Births.	Ex-nuptial Live Births.
Spain ...	108.3	107.9	German Empire ...	105.2	104.7
Rumania ...	107.7	108.4	Finland ...	105.0	105.2
Portugal ...	107.5	106.4	Hungary ...	105.0	102.9
Austria ...	105.8	105.5	Sweden ...	105.0	104.3
Italy ...	105.8	104.4	Denmark ...	104.8	105.0
Norway ...	105.8	105.9	Servia ...	104.7	103.5
Ireland ...	105.5	104.8	France ...	104.6	102.9
Netherlands ...	105.5	104.7	Belgium ...	104.5	102.2
Scotland ...	105.5	105.9	Switzerland ...	104.5	101.6
Russia, European ...	105.4	104.5	England ...	103.6	104.4

(a) Number of males to each 100 females.

The masculinity of ex-nuptial births in the Commonwealth was as follows:—

MASCULINITY (a) OF EX-NUPTIAL BIRTHS REGISTERED, COMMONWEALTH, 1901 TO 1911.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Territ'y.	Federal Capital Territ'y.	C'wlth.
1901 ...	108.46	102.22	107.84	100.56	100.00	102.07	...	...	105.50
1902 ...	103.67	106.78	100.23	106.91	111.11	93.17	...	...	103.96
1903 ...	97.79	114.83	95.22	100.00	114.29	122.66	...	...	104.10
1904 ...	100.80	108.68	95.77	83.50	107.28	93.71	200.00	...	100.98
1905 ...	102.50	102.52	105.63	96.94	98.75	102.80	...	...	102.44
1906 ...	103.10	102.23	104.17	116.97	118.13	124.82	100.00	...	105.44
1907 ...	104.91	105.59	100.90	113.56	115.94	100.00	...	...	105.11
1908 ...	108.60	105.88	96.83	96.82	89.33	108.51	150.00	...	104.00
1909 ...	105.46	102.16	103.90	105.37	129.14	129.01	66.67	...	106.25
1910 ...	104.96	103.59	100.39	101.33	89.70	106.94	200.00	...	103.05
1911 ...	101.73	106.61	97.94	106.19	108.05	105.67	28.57	(b) ...	103.10

(a) Number of males to each 100 females. (b) Part of New South Wales prior to 1911.

It is curious to note that while, so far as the total births are concerned, there has always been an excess of male births over female births (excepting Tasmania in 1911), this has not been the case in regard to ex-nuptial births, where in South Australia in 1904 the masculinity was only 83.50. On the other hand it rose as high as 129.14 in Western Australia in 1909. Little weight, however, can be attached to these results on account of the small totals on which they are based.

6. *Ex-nuptiality of Births.*—The total ex-nuptial births fell from 1901 to 1903, then rose rapidly to 1908 and remained almost stationary till 1909, when the number again decreased. The total for 1910 was the lowest number recorded since 1906. See the table on the following page.

It is, of course, possible that the number of ex-nuptial births is somewhat understated, owing to diffidence in proclaiming the fact of ex-nuptiality, and it is not unlikely that the majority of unregistered births are ex-nuptial.

TOTAL EX-NUPTIAL BIRTHS REGISTERED IN THE COMMONWEALTH, 1901 to 1911.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	F. C. Terr.	C'wealth.
1901 ...	2,712	1,729	848	361	222	293	...	...	6,165
1902 ...	2,497	1,677	859	389	247	311	...	...	5,980
1903 ...	2,413	1,695	857	354	315	285	...	...	5,919
1904 ...	2,755	1,707	971	364	313	308	3	...	6,421
1905 ...	2,912	1,689	950	381	318	290	1	...	6,545
1906 ...	2,882	1,721	1,076	356	373	308	2	...	6,718
1907 ...	2,920	1,764	1,117	378	298	306	...	...	6,783
1908 ...	2,887	1,793	1,118	435	337	294	5	...	6,867
1909 ...	2,821	1,870	1,097	421	346	300	5	...	6,860
1910 ...	2,853	1,759	1,034	455	313	298	9	...	6,721
1911 ...	2,921	1,969	1,057	466	362	290	9	(a)...	7,074

(a) Part of New South Wales prior to 1911.

(i.) *Rate of Ex-nuptiality, 1901 to 1911.* The rate of ex-nuptiality, i.e., the percentage of ex-nuptial to total births, shews on the whole a slight increase from 1902 to 1905, with a decrease during the last six years, as the subjoined table shews:—

PERCENTAGE OF EX-NUPTIAL ON TOTAL BIRTHS, COMMONWEALTH, 1901 to 1911.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	F. C. Terr.	C'wealth.
	%	%	%	%	%	%	%		%
1901 ...	7.16	5.58	5.93	3.96	3.88	5.94	...	...	5.99
1902 ...	6.60	5.51	6.04	4.36	3.96	6.12	...	...	5.82
1903 ...	6.71	5.73	6.79	4.18	4.70	5.61	...	...	6.01
1904 ...	7.12	5.74	6.90	4.00	4.36	5.82	9.09	...	6.17
1905 ...	7.37	5.61	6.97	4.36	4.19	5.52	2.78	...	6.24
1906 ...	7.04	5.58	7.68	3.99	4.78	5.78	8.00	...	6.23
1907 ...	6.92	5.62	7.68	4.10	3.86	5.78	...	...	6.15
1908 ...	6.80	5.77	7.54	4.44	4.35	5.24	14.71	...	6.16
1909 ...	6.44	5.94	7.05	4.18	3.95	5.45	18.52	...	6.01
1910 ...	6.28	5.60	6.89	4.32	4.13	5.33	22.50	...	5.75
1911 ...	6.14	5.96	6.22	4.21	4.47	5.33	29.03	(a)...	5.79

(a) Part of New South Wales prior to 1911.

A comparison of greater significance would be obtained by calculating the number of ex-nuptial births per thousand of the single and widowed female population between the ages of 15 and 45, and will be given in the next issue of this book for the period 1910-12. The calculation has been made for the three last Census periods, and covers in each case the Census year, together with the year immediately preceding and the year immediately following. The number of ex-nuptial births per 1000 unmarried women of ages 15 to 45 has been found to be as follows:—Years 1880-82, 14.49; years 1890-92, 15.93; years 1900-02, 13.30.

(ii.) *Causes of Increase.* Since the rate of ex-nuptiality might appear to increase by the mere decrease in the general birth rate, the following table has been prepared:—

CRUDE EX-NUPTIAL, NUPTIAL AND TOTAL BIRTH RATES (a), COMMONWEALTH, 1901 TO 1911 (b).

Birth.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.
Ex-nuptial	1.63	1.55	1.52	1.63	1.64	1.65	1.64	1.64	1.60	1.54	1.57
Nuptial ...	25.53	25.16	23.77	24.78	24.59	24.92	25.12	24.95	25.09	25.19	25.64
Total ...	27.16	26.71	25.29	26.41	26.23	26.57	26.76	26.59	26.69	26.73	27.21

(a) Number of births per 1000 of mean population.

(b) Rates corrected in view of Census Returns, 1911.

(iii.) *Ex-nuptiality—Rates of Various Countries.* The rate for the Commonwealth is higher than that for England and Wales, slightly lower than that for Scotland, and considerably below the rates for many of the countries for which returns are available, as the table hereunder shews. The rates shewn below refer to three triennial periods, 1880-2, 1890-2, and 1900-2, and are given per thousand of the unmarried and widowed female population:—

EX-NUPTIAL BIRTHS PER THOUSAND OF UNMARRIED AND WIDOWED FEMALE POPULATION IN VARIOUS COUNTRIES.

Country.	Rate.			Country.	Rate.		
	1880-2.	1890-2.	1900-2.		1880-2.	1890-2.	1900-2.
	%	%	%		%	%	%
Ireland	4.4	3.9	3.8	Belgium	20.0	20.6	17.8
Netherlands	9.7	9.0	6.8	France	17.6	17.7	19.1
England and Wales ...	14.1	10.5	8.5	Italy	25.4	...	19.4
New Zealand	13.4	9.0	8.9	Russia	25.8	25.1	23.7
Switzerland	10.8	10.0	9.8	Denmark	26.9	24.5	24.2
Commonwealth	14.5	15.9	13.3	Sweden	22.6	22.9	24.3
Scotland	21.4	17.1	13.4	German Empire ...	29.6	28.7	27.4
Spain	16.0	17.5	15.5	Austria	43.4	42.7	40.1
Norway	19.7	16.9	17.2				

It may be added that the general circumstances in Australia with regard to opportunity for marriage are probably relatively easy as compared with those in older established countries.

7. **Multiple Births.**—Among the total number of 122,193 births registered in the Commonwealth in 1911 there were 119,721 single births, 2430 twins, and 42 triplets. The number of cases of twins was 1222, fourteen children being still-born, and the number of cases of triplets 14. The total number of mothers was, therefore, 120,957, the proportion of mothers of twins being one in every 99, and of mothers of triplets one in every 8639 of total mothers. The proportion of multiple births is a fairly constant one. In 1907 they numbered 1043 out of a total of 109,306, or one in 105; in 1908, 1065, or one in 104; in 1909, 1142, or one in 99; in 1910, 1189, or one in 99, and in 1911, 1236, or one in 98. The number of cases of triplets is so small that a slight alteration in the total will completely change the proportion. Thus, there were 14 cases in 1907, or one in 7872 of total mothers, as compared with one in 18,415 in 1908; one in 8066 in 1909, one in 8893 in 1910, and one in 8639 in 1911.

8. **Ages of Parents.**—The relative ages of the parents of children registered in 1911 have been tabulated, twins and triplets being distinguished from single births, and are shewn for single ages and for every State in "Bulletin of Population and Vital Statistics, No. 29; Commonwealth Demography, 1911 and previous years." In the present work the exigencies of space allow only the insertion of corresponding tables shewing the relative ages of parents in groups of five years. It will be seen from the tables that the largest number of single births occurred where the ages of both father and mother were between 25 and 29, while the largest number of twin births occurred where the ages of both father and mother were between 30 and 34. The largest number of mothers was found at ages 25 to 29.

(a) AGES OF PARENTS IN CASES OF SINGLE BIRTHS, COMMONWEALTH, 1911.

Age.	Total Fathers.	Ages of Mothers.								Not Stated.
		Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and Upwds.	
Ages of Fathers.										
Under 20	408	...	270	135	3	...	...	...	...	...
20 to 24	11,494	1	2,178	7,439	1,652	189	31	2	...	2
25 to 29	27,623	1	1,183	11,268	12,589	2,275	275	25	3	4
30 to 34	27,067	...	326	4,693	11,332	9,122	1,444	137	9	4
35 to 39	21,217	...	118	1,456	5,185	7,964	5,816	656	15	7
40 to 44	14,152	...	30	518	1,825	3,875	5,325	2,492	81	5
45 to 49	7,376	...	15	178	668	1,350	2,659	2,198	308	...
50 to 54	2,400	...	5	55	161	414	726	842	197	...
55 to 59	701	...	2	17	65	107	221	216	73	...
60 to 64	203	...	...	8	16	36	54	76	13	...
65 & upwards	107	...	...	5	11	21	31	32	7	...
Not stated	10	...	...	4	3	2	1	...	...	...
Mothers of nuptial children	112,758	2	4,127	25,776	33,511	25,355	16,583	6,676	706	22
Mothers of ex-nuptial children	3,963	23	1,839	2,761	1,260	567	359	110	22	22
Total mothers	119,721	25	5,966	28,537	34,771	25,922	16,942	6,786	728	44

(b) AGES OF PARENTS OF TWINS, COMMONWEALTH, 1911.

Age.	Total Fathers.	Ages of Mothers.						
		Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 & upwards.
Ages of Fathers.								
Under 20	2	2	...	...	...	...	...	...
20 to 24	83	13	56	12	2	8	...	...
25 to 29	247	4	84	114	37	8	...	...
30 to 34	272	...	27	106	115	23	1	...
35 to 39	263	...	7	54	98	92	12	...
40 to 44	170	...	1	11	42	77	38	1
45 to 49	89	...	2	4	24	34	23	2
50 to 54	25	...	...	1	3	12	6	3
55 to 59	13	...	...	1	1	6	5	...
60 to 64	1	...	...	...	...	1	...	...
65 and upwards	3	...	...	1	1	...	...	1
Mothers of nuptial twins	1,168	17	179	304	323	253	85	7
Mothers of ex-nuptial ..	54	9	23	10	7	4	...	1
Total mothers	1,222	26	202	314	330	257	85	8

(c) AGES OF PARENTS OF TRIPLETS, COMMONWEALTH, 1911.

Age.	Total Fathers.	Ages of Mothers.				
		20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.
Ages of Fathers.						
25 to 29	3	1	1	1	...	...
30 to 34	2	1	...	1	...	...
35 to 39	6	...	1	1	2	2
40 to 44	...	...	...	...	...	...
45 to 49	1	...	...	...	1	...
50 to 54	1	...	...	1	...	...
Mothers of nuptial triplets	13	2	2	4	3	2
Mothers of ex-nuptial triplets	1	1	...	...	...	...
Total mothers	14	3	2	4	3	2

9. **Birthplaces of Parents.**—The relative birthplaces of the parents of children whose births were registered during the year 1911 will be found tabulated in the Bulletin before-mentioned. A summary of the results of the tabulation is here given:—

BIRTHPLACES OF PARENTS OF CHILDREN, COMMONWEALTH, 1911.

Birthplaces.	Fathers			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.		
	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.
AUSTRALASIA—									
Commonwealth of Australia—									
N. South Wales	35,154	348	3	38,442	380	4	2,647	23	1
Victoria	31,014	337	3	31,667	337	4	1,931	12	...
Queensland	9,287	99	1	11,744	118	1	931	8	...
South Australia	12,090	110	2	12,256	116	1	538	4	...
Western Australia	1,290	15	1	1,730	21	1	110	...	...
Tasmania	5,023	50	...	5,186	55	...	354	3	...
North. Territory	7	...	...	10	...	...	7	1	...
New Zealand	1,247	10	...	1,186	14	1	67	1	...
EUROPE—									
England...	9,445	106	1	5,782	77	...	198	1	...
Wales	294	3	...	207	1	...	11	...	...
Scotland...	2,268	20	1	1,466	20	...	46	...	...
Ireland	2,108	30	...	1,363	11	...	46	...	...
Isle of Man	10	1	...	7	2	...	...	...	...
Other European British Possessions...	38	...	...	11	...	...	1	...	...
Austria-Hungary	80	2	...	33	1	...	1	...	...
Belgium...	9	...	...	11	...	...	1	...	...
Denmark	200	...	...	66	...	...	3	...	...
France	59	...	...	23	...	...	3	...	...
Germany	1,052	5	...	541	2	...	6	...	...
Greece	41	...	...	14	...	...	...	...	...
Italy	282	4	...	171	1	...	6	...	...
Netherlands	22	...	...	6	...	...	...	...	...
Norway	100	2	...	29	...	...	1	...	...
Portugal...	6	...	...	3	...	...	...	...	...
Russia	147	4	...	74	3	...	...	...	...
Spain	16	...	...	11	...	...	...	...	...
Sweden	208	3	...	28	1	...	1	...	...
Switzerland	38	1	...	27	...	...	1	...	...
Other European Countries	99	...	...	10	...	...	...	...	...
ASIA—									
British India	177	4	...	95	1	...	2	...	...
Ceylon	23	...	...	7	...	...	...	...	...
Hong Kong	5	...	...	6	...	...	...	...	...
Straits Settlements	8	...	...	5	...	...	...	...	...
Afghanistan	6	...	...	...	...	...	...	...	...
Arabia	4	...	...	...	...	...	...	...	...
China	171	2	1	51	1	1	1	...	...
Japan	21	...	...	10	...	...	1	...	...
Java	4	...	...	...	...	...	...	...	...
Philippine Islands	7	...	...	2	...	...	...	...	...
Syria	87	...	...	72	...	...	...	...	...
Other Asiatic Countries	13	1	...	2	...	...	1	...	...

BIRTHPLACES OF PARENTS OF CHILDREN—Continued.

Birthplace.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.		
	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.
AFRICA—									
Cape of Good Hope	11	...	...	13	...	...	...	...	...
Mauritius	23	...	...	8	...	...	1	...	...
Natal	1	...	...	4	...	...	...	...	...
Orange Free State	1	...	...	...	...	...	...	...	...
Transvaal	1	...	...	2	...	...	...	...	...
S. Africa (undefined)	71	...	...	88	...	...	1	...	...
Other African British Possessions	3	...	...	1	...	...	...	...	...
Egypt	2	1	...	10	...	...	...	...	...
Other African Countries	8	...	...	3	...	...	...	...	...
AMERICA—									
Barbadoes	...	...	...	...	...	...	...	...	...
Canada	59	...	...	33	1	...	3	...	...
Jamaica	3	...	...	1	...	...	...	...	...
Newfoundland	2	...	...	...	...	...	...	...	...
Other American British Pos.	3	...	...	3	1	...	...	...	...
Argentine Republic	2	...	...	3	...	...	...	...	...
Brazil	2	...	...	1	...	...	...	...	...
Chile	1	...	...	...	...	...	...	...	...
Mexico	3	...	...	...	...	...	...	...	...
United States of America	178	4	...	85	2	...	3	...	...
Other American Countries	62	...	...	15	...	...	1	...	...
POLYNESIA—									
Fiji	27	...	...	21	...	...	1	...	...
Friendly Islands	2	...	...	...	...	...	...	...	...
Other Polynesian British Pos.	1	...	...	...	...	...	...	...	...
New Caledonia	4	...	...	7	...	...	3	...	...
New Hebrides	11	...	...	1	...	...	...	1	...
Samoa	4	...	...	1	...	...	...	...	...
Other Polynesian Islands	2	...	...	1	...	...	1	...	...
South Sea Islands (so described)	17	1	...	3	...	...	1	...	...
At Sea	127	5	...	81	2	...	7	...	...
Unspecified	27	...	...	19	...	...	26	...	...
Total	112,758	1,168	13	112,758	1,168	13	6,963	54	1

10. **Occupations of Fathers.**—A summary of the occupations of the fathers of all nuptial children, whose births were registered in 1911, will be found in the following table. The figures include all the States and Territories of the Commonwealth:—

OCCUPATIONS OF FATHERS OF ALL NUPTIAL CHILDREN, COMMONWEALTH, 1911.

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
CLASS I.—PROFESSIONAL.			
General Government	582	Wool and Tallow	101
Local Government	98	Hay, Corn, etc.	252
Defence	165	Other Vegetable Matter	200
Law and Order	1,182	Wood and Coal	300
Religion	352	Glass and Earthenware	31
Charities	6	Gold, Silver, and Precious Stones	17
Health	840	Ironmongery	235
Literature	170	Merchants, etc.	469
Science	94	Shopkeepers and Assistants	1,071
Engineering, Architecture, and		Dealers and Hawkers	391
Surveying	856	Agents and Brokers	503
Education	780	Clerks, Bookkeepers, etc.	2,747
Fine Arts	153	Commercial Travellers, Salesmen	1,224
Music	137	Others engaged in Commercial	
Amusements	377	Pursuits	887
		Speculators on Chance Events	48
		Storage	9
Total Professional	5,292		
CLASS II.—DOMESTIC.		Total Commercial	15,345
Hotelkeepers and Assistants	888	CLASS IV.—TRANSPORT AND COMMUNICATION.	
Others engaged in providing board and lodging	240	Railway Traffic	3,788
House Servants	193	Tramway Traffic	998
Coachmen and Grooms	260	Road Traffic	5,051
Hairdressers	596	Sea and River Traffic	1,633
Laundrymen	51	Postal Service	453
Others engaged domestic occupations	190	Telegraph and Telephone Service	414
		Messengers, etc.	23
Total Domestic	2,418		
CLASS III.—COMMERCIAL.		Total Transport & Communication	12,360
Banking and Finance	400	CLASS V.—INDUSTRIAL.	
Insurance and Valuation	483	Books and Publications	824
Land and Household Property	139	Musical Instruments	55
Property Rights not otherwise clsd.	4	Prints and Pictures	79
Books, Publications, Advertising	177	Ornaments and Small Wares	105
Musical Instruments	17	Equipment for Sports and Games	4
Prints and Pictures	2	Designs, Medals, Type	30
Ornaments and Small Wares	11	Watches and Clocks	138
Designs, Medals, Types	1	Surgical Instruments	7
Arms and Ammunition	1	Arms and Ammunition	8
Watches, Clocks, Jewellery	6	Engines and Machinery	1,158
Surgical Instruments	1	Carriages and Vehicles	856
Machinery	54	Harness and Saddlery	494
Carriages and Vehicles	46	Ships and Boats	139
Harness and Saddlery	9	Furniture	522
Ships, Boats, Marine Stores	4	Building Materials	693
Building Materials	27	Chemicals	48
Furniture	73	Textile Fabrics	59
Chemicals	13	Dress	1,995
Paper and Stationery	58	Fibrous Materials	44
Textile Fabrics	634	Animal Food	399
Dress	223	Vegetable Food	1,526
Fibrous Materials	6	Groceries, Drinks, Narcotics, and	
Animal Food	2,318	Stimulants	436
Vegetable Food	670	Animal Matter	431
Groceries, Drinks, Narcotics, and		Workers in wood not elsewhere clsd.	119
Stimulants	1,191	Fodder	15
Living Animals	252	Paper	18
Leather	40	Stone, Clay, Glass	667

OCCUPATIONS OF FATHERS OF ALL NUPTIAL CHILDREN—Continued.

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
Jewellery and Precious Stones ...	218	CLASS VI.—AGRICULTURAL, PASTORAL, MINING, ETC.	
Metals, other than Gold & Silver ...	3,288	Agricultural ...	19,481
Gas, Electric Lighting ...	576	Pastoral ...	3,710
Building—		Dairying ...	1,472
Builders ...	441	Fisheries, Capture and Destruction of Wild Animals, or acquisition of Products yielded thereby ...	356
Stonemasons ...	282	Forestry ...	719
Bricklayers ...	507	Water Conservation and Supply ...	125
Carpenters ...	2,805	Mines and Quarries ...	7,366
Slaters ...	39	Total Primary Producers ...	33,229
Plasterers ...	277	CLASS VII.—INDEFINITE.	
Painters ...	1,239	Independent Means ...	112
Plumbers ...	729	Occupation not stated ...	26
Signwriters ...	63	Total Indefinite ...	138
Others ...	21	CLASS VIII.—DEPENDENTS.	
Roads, Railways, Earthworks ...	294	Dependent Relatives ...	8
Disposal of the Dead ...	39	Total Dependents ...	8
Disposal of Refuse ...	211	Total all Occupations ...	113,939
Other Industrial Workers—			
Manufacturers ...	311		
Engineers, Firemen ...	2,658		
Contractors ...	1,229		
Labourers ...	18,852		
Others ...	251		
Total Industrial ...	45,149		

11. **Mothers' Age, Duration of Marriage, and Issue.**—A tabulation has been made shewing, in age-groups, the duration of marriage and issue of mothers. The total number of nuptial confinements in 1911 was 113,939, viz., 112,758 single births, 1168 cases of twins, and 13 cases of triplets. From this number 335 mothers must be deducted, in whose case the necessary particulars either as to date of marriage or as to previous issue were not stated. The tables refer, therefore, to a total of 113,604 mothers. They exclude children by former marriages and still-born children, but include ex-nuptial children, previous issue by the same father. The tables cannot be given in *extenso*, but the following are their most salient features. The complete tabulations are shewn in "Commonwealth Bulletin of Population and Vital Statistics, No. 29; Commonwealth Demography, 1911, and previous years."

**DURATION OF MARRIAGE AND ISSUE OF MOTHERS OF ALL AGES,
COMMONWEALTH, 1911.**

Duration of Marriage.	Total Mothers.	Total Issue.	Average Number of Children.	Duration of Marriage.	Total Mothers.	Total Issue.	Average Number of Children.
Years.				Years.			
0-1 ...	19,198	19,411	1.01	18-19 ...	1,343	10,118	7.54
1-2 ...	8,178	9,071	1.11	19-20 ...	1,295	10,327	7.97
2-3 ...	8,457	15,180	1.79	20-21 ...	1,127	9,396	8.34
3-4 ...	9,907	20,735	2.09	21-22 ...	900	7,848	8.72
4-5 ...	8,601	21,580	2.51	22-23 ...	702	6,398	9.11
5-6 ...	7,802	22,720	2.91	23-24 ...	536	5,042	9.41
6-7 ...	6,780	22,343	3.30	24-25 ...	387	3,829	9.89
7-8 ...	5,660	20,760	3.67	25-26 ...	235	2,482	10.56
8-9 ...	4,916	19,598	3.99	26-27 ...	184	1,957	10.64
9-10 ...	4,656	20,029	4.31	27-28 ...	96	1,009	10.51
10-11 ...	4,302	20,239	4.70	28-29 ...	56	647	11.55
11-12 ...	3,975	20,262	5.10	29-30 ...	29	331	11.41
12-13 ...	3,274	17,877	5.46	30-31 ...	14	180	12.85
13-14 ...	2,848	16,290	5.72	31-32 ...	5	47	9.40
14-15 ...	2,491	15,310	6.15	32-33 ...	1	10	10.00
15-16 ...	2,240	14,483	6.47				
16-17 ...	1,845	12,589	6.82	Total	113,604	379,427	3.34
17-18 ...	1,564	11,829	7.24				

AGES AND ISSUE OF MOTHERS, COMMONWEALTH, 1911.

Ages of Mothers.	Total Mothers.	Total Issue.	Average Number of Children.	Ages of Mothers.	Total Mothers.	Total Issue.	Average Number of Children.
Under 20 years	4,132	4,886	1.18	40-44 years ...	6,756	47,066	6.97
20-24 years ...	25,791	45,597	1.77	45 yrs. and over	710	6,051	8.52
25-29 " ...	33,752	89,211	2.64				
30-34 " ...	25,652	97,885	3.82				
35-39 " ...	16,811	88,791	5.28	All ages ...	113,604	379,427	3.34

PREVIOUS ISSUE OF MOTHERS OF VARIOUS AGES, COMMONWEALTH, 1911.

Previous Issue.	Mothers' Ages.							
	Under 20 Years.	20-24 Years.	25-29 Years.	30-34 Years.	35-39 Years.	40-44 Years.	45 Years and Over.	Total.
0	3,456	13,089	9,271	3,632	1,279	303	20	31,000
1	619	7,717	8,672	4,327	1,539	316	24	23,214
2	53	3,642	7,109	4,522	1,997	405	29	17,757
3	4	1,085	4,727	4,328	2,277	531	36	12,988
4	...	246	2,419	3,501	2,243	722	40	9,171
5	...	50	1,093	2,527	2,143	740	48	6,601
6	...	8	336	1,565	1,848	777	64	4,598
7	...	4	86	745	1,383	771	70	3,059
8	...	...	29	317	970	706	72	2,094
9	...	...	8	131	591	607	86	1,423
10	...	...	2	44	292	388	72	798
11	...	...	...	7	152	229	63	451
12	...	...	...	4	54	188	46	242
13	...	...	...	2	25	69	22	118
14	...	...	...	...	12	34	8	54
15	...	...	...	...	6	18	4	23
16	...	...	...	...	...	3	5	8
17	...	...	...	...	...	2	1	3
18	...	...	...	...	...	1	...	1
22	...	...	...	...	...	1	...	1
Total Mothers	4,132	25,791	33,752	25,652	16,811	6,756	710	113,604

The tables shew a fairly regular increase in the number of children up to the period where the marriage has lasted twenty years, and it appears that the average interval between successive confinements up to that period was rather less than two and a half years. One mother of the age-group 40 to 44 years, had her twenty-fourth child in the twenty-sixth year of her marriage. The average number of children of all marriages was 3.34, the corresponding figure for 1910 having been 3.41.

A similar table has been prepared showing the previous issue of mothers of twins and triplets, from which it appears that 254 mothers had twins at their first confinement; 198 at their second; 195 at their third; 144 at their fourth; 116 at their fifth; 83 at their sixth; 67 at their seventh; 38 at their eighth; 39 at their ninth; 16 at their tenth; 9 at their eleventh; 4 at their twelfth; 3 at their thirteenth; 1 at her fourteenth; and one at her twenty-third.

Of the twelve cases of triplets 1 occurred at the first confinement; 4 at the second; 1 at the third; 2 at the fifth; 2 at the sixth; 2 at the seventh; and 1 at the ninth.

12. **Interval between Marriage and First Birth.**—The following table shews the interval between marriage and first birth. Twins and triplets are included, the eldest born only being enumerated.

INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH, COMMONWEALTH, 1911.

Interval.	Number of First Children.	Interval.	Number of First Children.	Interval.	Number of First Children.
Under 1 month	562	1 year	7,400	18 years	24
1 month	608	2 years	2,101	14 "	16
2 months	817	3 "	908	15 "	10
3 "	1,125	4 "	471	16 "	5
4 "	1,299	5 "	301	17 "	8
5 "	1,651	6 "	170	18 "	3
6 "	2,089	7 "	123	19 "	5
7 "	1,602	8 "	83	20 "	2
8 "	1,529	9 "	85	21 "	3
9 "	3,361	10 "	62	22 "	1
10 "	2,623	11 "	32	23 "	1
11 "	1,893	12 "	25	24 "	1
				25 "	1
				Total	31,000

Of these 31,000 children 15,954 were males and 15,046 were females; the masculinity of first births was therefore 106.03 as compared with 104.73 for total births.

The previous issue of mothers of ex-nuptial children is not recorded, but for the purposes of the following table all ex-nuptial births have been assumed to be first births. The table shews the ages of mothers of ex-nuptial births, of nuptial births occurring less than nine months after marriage, and of nuptial births occurring nine months or more after marriage. A comparison of the combined total of the first two columns with the total of nuptial children born nine months or more after marriage, reveals the fact that for all ages the ratio of the two was approximately as 9 is to 10. At all ages up to and including 21, however, there was a great preponderance of ex-nuptial births and of births following on ante-nuptial conception. It must, of course, be understood that a certain number of premature births are necessarily included among the births which occurred less than nine months after marriage, but there is no means of arriving at the proportion of those births.

**AGES OF MOTHERS AND INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH, etc.
COMMONWEALTH, 1911.**

Age of Mother at Birth of Child.	Ex-nuptial Births.	Nuptial Births less than nine months after Marriage.	Total of two preceding columns.	Nuptial Births nine months after Marriage and later.	Total Nuptial First Births.	Nuptial First Births and Ex-nuptial Births.
Years.						
13	3	...	3	...	...	3
14	20	2	22	...	2	22
15	68	21	89	1	22	90
16	191	138	329	13	151	342
17	326	375	701	76	451	777
18	547	799	1,346	259	1,058	1,605
19	716	1,222	1,938	550	1,772	2,488
20	737	1,265	2,002	889	2,154	2,891
21	628	1,376	2,004	1,186	2,562	3,190
22	539	1,194	1,733	1,602	2,796	3,335
23	476	1,057	1,533	1,834	2,891	3,367
24	405	854	1,259	1,782	2,636	3,041
25	319	673	992	1,749	2,422	2,741
26	291	529	820	1,678	2,207	2,498
27	257	406	663	1,481	1,887	2,144

AGES OF MOTHERS AND INTERVAL BETWEEN MARRIAGE AND FIRST
BIRTH—Continued,

Age of Mother at Birth of Child.	Ex-nuptial Births.	Nuptial Births less than nine months after Marriage.	Total of two preceding columns.	Nuptial Births nine months after Marriage and later.	Total Nuptial First Births.	Nuptial First Births and Ex-nuptial Births.
Years.						
28 ...	223	315	538	1,251	1,566	1,789
29 ...	180	233	413	956	1,189	1,369
30 ...	162	207	369	922	1,129	1,291
31 ...	123	122	245	672	794	917
32 ...	107	115	222	618	733	840
33 ...	96	91	187	445	536	632
34 ...	86	71	157	369	440	526
35 ...	89	56	145	307	363	452
36 ...	74	46	120	262	308	382
37 ...	59	32	91	211	243	302
38 ...	81	25	106	190	215	296
39 ...	60	14	74	136	150	210
40 ...	42	17	59	103	120	162
41 ...	27	11	38	69	80	107
42 ...	18	3	21	39	42	60
43 ...	14	6	20	28	34	48
44 ...	9	4	13	23	27	36
45 ...	11	2	13	11	13	24
46 ...	5	...	5	2	2	7
47 ...	5	1	6	2	3	8
48 ...	2	...	2	1	1	3
51 ...	...	...	...	1	1	1
Not stated	22	...	22	...	...	22
Total ...	7,018	11,282	18,300	19,718	31,000	38,018

Interval between Birth and Registration of Birth.—Information was obtained during 1911 as to the period elapsing between birth and registration. The maximum number registered was forty-one days after birth, while in the case of ex-nuptial births the greatest number of children was registered within two days after birth.

INTERVAL BETWEEN BIRTH AND REGISTRATION, COMMONWEALTH, 1911.

Interval.	Nuptial Births.	Ex- Nuptial Births.	Total Births.	Interval.	Nuptial Births.	Ex- Nuptial Births.	Total Births.
Under 1 day ...	217	75	292	16 days ...	1,242	136	1,378
1 day ...	541	255	796	17 " ...	1,304	142	1,446
2 days ...	485	367	852	18 " ...	1,330	150	1,480
3 " ...	489	280	769	19 " ...	1,517	147	1,664
4 " ...	416	132	548	20 " ...	1,579	136	1,715
5 " ...	441	134	575	21 " ...	1,565	122	1,687
6 " ...	417	106	523	22 " ...	1,691	100	1,791
7 " ...	482	94	576	23 " ...	1,573	98	1,671
8 " ...	499	89	588	24 " ...	1,673	106	1,779
9 " ...	554	75	629	25 " ...	1,765	110	1,875
10 " ...	718	85	803	26 " ...	1,946	105	2,051
11 " ...	812	101	913	27 " ...	1,926	127	2,053
12 " ...	1,018	101	1,119	28 " ...	2,173	110	2,283
13 " ...	1,270	142	1,412	29 " ...	2,297	118	2,415
14 " ...	1,227	148	1,375	30 " ...	2,251	138	2,389
15 " ...	1,210	141	1,351	31 " ...	2,392	131	2,523

INTERVAL BETWEEN BIRTH AND REGISTRATION, COMMONWEALTH,
1911—Continued.

Interval.	Nuptial Births.	Ex-Nuptial Births.	Total Births.	Interval.	Nuptial Births.	Ex-Nuptial Births.	Total Births.
32 days ...	2,361	142	2,503	55 days ...	1,974	72	2,046
33 " ...	2,467	135	2,602	56 " ...	1,875	54	1,929
34 " ...	2,505	149	2,654	57 " ...	1,932	67	1,999
35 " ...	2,700	121	2,821	58 " ...	2,046	80	2,126
36 " ...	2,890	134	3,024	59 " ...	2,052	75	2,127
37 " ...	3,045	115	3,160	60 " ...	1,413	54	1,467
38 " ...	3,364	108	3,472	61 to 69 days	1,828	81	1,909
39 " ...	3,539	134	3,673	70 " 79 "	720	42	762
40 " ...	4,168	118	4,286	80 " 89 "	401	20	421
41 " ...	4,588	144	4,732	90 " 99 "	232	16	248
42 " ...	3,847	125	3,972	100 " 109 "	177	9	186
43 " ...	2,915	71	2,986	110 " 119 "	124	3	127
44 " ...	2,417	73	2,490	120 " 129 "	84	10	94
45 " ...	2,318	53	2,371	130 " 139 "	65	6	71
46 " ...	2,174	73	2,247	140 " 149 "	56	2	58
47 " ...	2,126	63	2,189	150 " 159 "	50	3	53
48 " ...	1,999	58	2,057	160 " 169 "	48	1	49
49 " ...	1,941	48	1,989	170 " 179 "	43	6	49
50 " ...	1,836	61	1,897	180 " 365 "	228	16	244
51 " ...	1,863	51	1,914	Not stated	107	11	118
52 " ...	1,875	63	1,938				
53 " ...	1,848	50	1,898				
54 " ...	1,858	56	1,914	Total Births	115,119	7,074	122,193

§ 2. Marriages.

1. **Marriages, 1901 to 1911.**—The number of marriages registered in the Commonwealth in 1911 was 39,482, the highest number ever recorded. There has been a steady increase in the annual number of marriages in each State since 1903, and the crude marriage-rate increased similarly in all the States until 1907, with the exception of Western Australia. In 1908 all the States, with the exception of New South Wales and Tasmania, had a lower marriage rate than in 1907, but the rate recovered in 1909, 1910 and 1911, and was considerably higher in the latter year than in 1907 in all the States. The number of marriages in each State since 1901 is shewn below. The rate for 1911 was the highest ever experienced in the Commonwealth.

TOTAL MARRIAGES, COMMONWEALTH, 1901 to 1911.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fd. Cp. Terr.	C'wealth.
1901 ...	10,538	8,406	3,341	2,304	1,821	1,338	5	...	27,753
1902 ...	10,486	8,477	3,243	2,376	2,024	1,313	7	...	27,926
1903 ...	9,759	7,605	2,933	2,260	2,064	1,344	12	...	25,977
1904 ...	10,422	8,210	3,078	2,526	2,088	1,350	8	...	27,682
1905 ...	10,970	8,774	3,173	2,594	2,123	1,365	5	...	29,004
1906 ...	11,551	8,930	3,588	2,679	2,261	1,399	2	...	30,410
1907 ...	12,187	9,575	4,105	3,070	2,114	1,410	9	...	32,470
1908 ...	12,641	9,335	4,009	3,112	2,012	1,432	10	...	32,551
1909 ...	13,025	9,431	4,543	3,275	1,997	1,494	10	...	33,775
1910 ...	14,307	10,239	4,768	3,661	2,107	1,493	17	...	36,592
1911 ...	15,278	11,088	5,167	4,036	2,421	1,477	10	a) 5	39,482

(a) Part of New South Wales prior to 1911.

2. **Marriage Rates, 1901 to 1911.**—The number of marriages registered per thousand of mean population is shewn in the following table for the same period:—

CRUDE MARRIAGE RATE (a), COMMONWEALTH, 1901 to 1911 (b).

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	N. Terr.	Fed. Cap. Territory.	Commonwealth.
1901 ...	7.73	6.99	6.66	6.45	9.68	7.76	1.05	...	7.32
1902 ...	7.55	7.02	6.35	6.68	9.89	7.50	1.53	...	7.26
1903 ...	6.90	6.31	5.70	6.36	9.40	7.45	2.76	...	6.67
1904 ...	7.24	6.83	5.90	7.08	8.92	7.38	1.90	...	7.02
1905 ...	7.46	7.28	6.00	7.21	8.61	7.40	1.21	...	7.25
1906 ...	7.68	7.36	6.69	7.38	8.89	7.59	0.50	...	7.49
1907 ...	7.89	7.81	7.56	8.35	8.27	7.63	2.35	...	7.87
1908 ...	8.03	7.53	7.24	8.23	7.80	7.64	2.74	...	7.76
1909 ...	8.15	7.48	7.97	8.43	7.59	7.85	2.83	...	7.90
1910 ...	8.76	7.98	8.06	9.21	7.77	7.82	5.00	...	8.37
1911 ...	9.24	8.84	8.41	9.81	8.44	7.76	3.01	(c) 2.81	8.79

(a) Number of marriages (not persons married) per 1000 of mean annual population. (b) Rate corrected in view of Census Returns, 1911. (c) Part of New South Wales prior to 1911.

As in some international tabulations the marriage rates are calculated per 1000 of the unmarried population of 15 years and over, the corresponding rates have been worked out for the Commonwealth for the three last Census periods. The figures comprise in each case the Census year with the year immediately preceding and the year immediately following, and are as follows:—Years 1880-82, 48.98; years 1890-92, 45.74; years 1900-02, 42.14. These rates refer, of course, to persons married and not to marriages, as do the rates in the preceding table. Corresponding figures for the period 1910-1912 will be given in the next issue of this book.

3. **Marriage Rates in Various Countries.**—A comparison of the Australian marriage rate with that of European countries shews it to be considerably below the rates prevailing in the East of Europe, above those of Central and Western Europe, and much higher than those of the North of Europe:—

CRUDE MARRIAGE RATES.—VARIOUS COUNTRIES (a).

Country.	Year.	Crude Marriage Rate.	Country.	Year.	Crude Marriage Rate.
Canada (Ontario) ...	1910	10.35	Austria ...	1910	7.55
Servia ...	1909	9.35	England and Wales ...	1910	7.50
Rumania ...	1910	9.20	Switzerland ...	1909	7.45
Bulgaria ...	1909	9.15	Denmark ...	1910	7.30
Commonwealth ...	1911	8.79	Netherlands ...	1910	7.15
New Zealand ...	1911	8.67	Spain ...	1910	7.10
Hungary ...	1910	8.65	Scotland ...	1910	6.50
France ...	1910	7.90	Norway ...	1910	6.20
Russia ...	1905	7.80	Finland ...	1910	6.10
German Empire ...	1910	7.75	Sweden ...	1910	6.00
Italy ...	1910	7.75	Ireland ...	1910	5.05
Belgium ...	1909	7.65			

(a) Rates corrected in view of Census Returns, 1911.

4. **Age at Marriage.**—(a) The age at marriage of bridegrooms and brides will be found in the following table, the previous conjugal condition of the contracting parties being distinguished. It will be seen that no less than 1472 males were married during 1911 who were less than twenty-one years of age, of whom one was a widower. The corresponding number of females was 8028, of whom four were widows. At the other extreme there were thirty-seven men of sixty-five years and upwards, who described themselves as bachelors, and seven spinsters of corresponding ages.

AGES AND CONJUGAL CONDITION OF PERSONS MARRIED.
COMMONWEALTH.

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors	Widowers	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
14 years	...	...	...	...	7	...	...	7
15 "	...	...	...	...	59	...	...	59
16 "	7	...	...	7	344	...	...	344
17 "	31	...	...	31	892	...	...	892
18 "	143	...	...	143	1,766	...	...	1,766
19 "	431	1	...	432	2,338	1	...	2,339
20 "	859	...	...	859	2,618	3	...	2,621
21 "	2,235	1	...	2,236	4,162	11	1	4,174
22 "	2,510	1	1	2,512	3,576	15	3	3,594
23 "	3,100	10	...	3,110	3,491	15	2	3,508
24 "	3,322	10	2	3,334	3,128	16	10	3,154
25 "	3,209	16	5	3,230	2,786	33	6	2,825
26 "	3,032	29	1	3,062	2,239	35	9	2,283
27 "	2,781	24	3	2,808	1,844	51	13	1,908
28 "	2,432	34	6	2,472	1,548	56	11	1,615
29 "	2,021	45	7	2,073	1,226	64	15	1,305
30 "	1,706	66	6	1,778	1,008	69	16	1,093
31 "	1,418	45	6	1,469	720	65	15	800
32 "	1,235	55	8	1,298	644	69	16	749
33 "	989	55	8	1,052	452	49	21	522
34 "	758	75	5	838	434	54	13	501
35 "	683	61	4	748	413	88	17	518
36 "	621	71	13	705	276	63	14	353
37 "	524	69	4	597	205	65	14	284
38 "	505	68	13	586	231	77	9	317
39 "	382	79	11	472	185	87	10	282
40 "	317	88	11	416	126	79	2	207
41 "	236	57	5	298	90	52	9	151
42 "	233	79	3	315	95	68	6	169
43 "	172	91	2	265	73	52	5	130
44 "	132	63	5	200	53	60	10	123
45 "	176	74	7	257	56	64	9	129
46 "	124	90	12	226	38	44	5	87
47 "	121	71	2	194	39	44	2	85
48 "	101	79	12	192	31	53	13	97
49 "	83	45	2	130	24	43	...	67
50 "	63	64	3	130	23	31	5	59
51 "	41	54	5	100	11	21	...	32
52 "	42	58	2	102	10	32	...	42
53 "	42	58	1	101	10	18	1	29
54 "	23	57	3	83	6	14	...	20
55 "	22	55	1	78	6	19	...	25
56 "	18	40	...	58	7	16	1	24
57 "	17	35	1	53	10	14	1	25
58 "	10	29	...	39	7	16	...	23
59 "	12	19	...	31	5	10	...	15
60 "	12	37	1	50	2	17	...	19
61 "	8	28	...	36	...	8	...	8
62 "	5	22	...	27	2	8	...	10
63 "	5	25	2	32	...	12	...	12
64 "	8	20	...	28	2	4	...	6
65 "	5	21	...	26	1	16	...	17
66 "	6	19	...	25	1	5	...	6
67 "	5	17	...	22	1	9	...	10
68 "	5	17	...	22	...	5	1	6
69 "	4	15	...	19	...	4	...	4
70 "	1	14	...	15	...	8	...	8

AGES AND CONJUGAL CONDITION OF PERSONS MARRIED, 1911—Continued.
COMMONWEALTH.

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors	Widowers	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
71 years ...	1	5	...	6	1	6	...	7
72 " ...	1	5	...	6	...	1	...	1
73 " ...	3	6	...	9	...	...	...	...
74 " ...	1	3	...	4	1	1	...	2
75 " ...	2	8	...	10	...	1	...	1
76 " ...	1	3	...	4	...	...	...	...
77 " ...	...	4	...	4	...	...	...	...
78 " ...	...	2	...	2	1	2	...	3
79 " ...	...	4	...	4	...	...	...	...
80 " ...	...	3	...	3	...	...	...	...
81 " ...	1	...	...	1	...	...	...	...
82 " ...	1	1	...	2	...	...	...	...
85 " ...	...	1	...	1	...	...	...	...
Not stated ...	1	3	...	4	7	3	...	10
Total ...	36,995	2,304	183	39,482	37,351	1,846	285	39,482

(b) The relative ages of bridegrooms and brides are shewn for single years in "Bulletin of Population and Vital Statistics, No. 29"; a condensation into age-groups of five years is here given:—

RELATIVE AGES OF PERSONS MARRIED, COMMONWEALTH, 1911.

Ages.	Total Bridegrooms.	Ages of Brides.							
		Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and Upwds.
Ages of Bridegrooms.									
Under 20 ...	613	...	483	163	15	1	...	1	...
20 to 24 ...	12,051	4	3,059	7,268	1,482	178	49	6	3
25 to 29 ...	13,645	3	1,396	6,557	4,593	880	169	31	13
30 to 34 ...	6,435	...	349	2,098	2,349	1,216	331	72	19
35 to 39 ...	3,108	...	107	651	944	738	477	133	58
40 to 44 ...	1,494	...	30	195	335	360	332	162	79
45 to 49 ...	999	...	17	79	149	181	231	170	172
50 to 54 ...	516	...	9	19	44	73	90	112	169
55 to 59 ...	259	...	...	11	12	25	40	43	128
60 to 64 ...	173	...	...	5	7	4	22	34	101
65 and upwards ...	185	...	...	4	6	9	13	16	137
Not stated ...	4	...	...	1	...	...	...	...	3
Total Brides ...	39,482	7	5,400	17,051	9,936	3,665	1,754	780	879

5. **Previous Conjugal Condition.**—In a previous table the total number of bachelors and spinsters, widowed and divorced persons, who were married during the year 1911, was shewn. In the following table the relative conjugal condition of the contracting parties is given:—

RELATIVE CONJUGAL CONDITION OF PERSONS MARRIED, COMMONWEALTH, 1911.

Conjugal Condition.		Total Bridegrooms.	Brides.		
			Spinsters.	Widows.	Divorced.
Bridegrooms	Bachelors ...	36,995	35,583	1,197	215
	Widowers ...	2,304	1,621	626	57
	Divorced ...	183	147	23	13
Total Brides ...		39,482	37,351	1,846	285

6. **Birthplaces of Persons Married.**—Information as to the birthplaces of persons who were married in 1911 was not obtained in the State of Western Australia; the following figures refer, therefore, only to New South Wales, Victoria, Queensland, South Australia, Tasmania and Northern Territory and Federal Capital Territory. As might be expected, there were more brides than bridegrooms who were natives of the Commonwealth. In "Bulletin No. 29, Commonwealth Demography," the relative birthplaces of bridegrooms and brides will be found tabulated.

BIRTHPLACES OF PERSONS MARRIED, 1911.
COMMONWEALTH (a).

Birthplaces.	Bridegrooms.	Brides.	Birthplaces.	Bridegrooms.	Brides.
AUSTRALASIA—			ASIA—cont.—		
New South Wales ...	11,968	13,267	Philippine Islands ...	3	...
Victoria ...	10,314	10,661	Syria ...	15	5
Queensland... ..	3,474	4,221	Other Asiatic Countries	1	...
South Australia ...	3,980	4,050	AFRICA—		
Western Australia ...	33	39	Cape of Good Hope...	4	2
Tasmania ...	1,527	1,678	Mauritius ...	5	1
Northern Territory ...	2	6	S. Africa (Undefined)	33	17
New Zealand ...	450	303	Egypt ...	1	...
EUROPE—			Other African Countries ...	...	2
England ...	2,940	1,630	AMERICA—		
Wales ...	83	45	Canada ...	44	6
Scotland ...	789	460	Jamaica ...	1	...
Ireland ...	494	363	Newfoundland ...	2	...
Isle of Man ...	5	1	Other American British Possessions ...	3	...
Other European British Possessions ...	11	8	Argentine Republic...	2	...
Austria-Hungary ...	23	5	Chile ...	1	...
Belgium ...	4	...	Mexico ...	...	2
Denmark ...	46	16	Peru ...	1	...
France ...	33	14	United States ...	58	16
Germany ...	266	82	Other American Countries ...	40	13
Greece ...	15	2	POLYNESIA—		
Italy ...	38	13	Fiji ...	10	7
Netherlands ...	19	3	Other Polynesian British Possessions ...	3	...
Norway ...	37	5	New Caledonia ...	7	3
Portugal ...	1	...	New Hebrides ...	2	2
Russia ...	45	17	Samoa ...	1	...
Spain ...	6	5	Other Polynesian Islands ...	1	2
Sweden ...	64	6	South Sea Islands (so described) ...	14	...
Switzerland ...	20	4	At sea ...	32	26
Other European Countries ...	3	4	Not stated ...	9	11
ASIA—			Total ...	37,061	37,061
British India ...	54	26			
Ceylon ...	3	1			
Straits Settlements ...	2	...			
Afghanistan ...	3	...			
China ...	45	5			
Japan ...	12	3			
Java ...	4	3			

(a) Exclusive of Western Australia.

7. **Occupations and Ages of Bridegrooms.**—A tabulation has been made of the occupations and ages of all males married in the Commonwealth in the years 1907, 1908, 1909, 1910, and 1911. In "Bulletin No. 29" the 1911 tabulation is shewn for orders of occupations: here it is repeated for classes only, with a subdivision of the Industrial class and of the class of Primary Producers. The average ages of the persons falling under those twelve subdivisions were determined, and it appears that, apart from the Indefinite class, which consists chiefly of persons who have retired from business and

who are living on their own means, and where a high average age may naturally be expected, the average age ranges from 28.18 in the Manufacturing class to 31.88 years in the Pastoral class. The averages, calculated on the basis of the 1907, 1908, 1909 and 1910 figures, have been added for the purposes of comparison. The figures for five years are, however, rather small to allow of definite conclusions being drawn. The results obtained are shewn in the following table:—

OCCUPATIONS AND AGES OF BRIDEGROOMS, COMMONWEALTH, 1911.

Ages at Marriage.	Professional.	Domestic.	Mercantile.	Transport and Communication.	Industrial.				Primary Producers.				
					Manufacturing.	Building and Construction.	Indefinite Industrial Workers.	Agricultural.	Pastoral.	Mines and Quarries.	Other Primary Producers.	Indefinite.	
15 years ...	...	...	...	...	...	...	...	...	...	...	...	...	...
16 " ...	...	...	...	...	...	...	...	...	...	...	...	...	...
17 " ...	...	2	4	5	12	3	3	1	1	...	1	...	...
18 " ...	6	1	17	25	21	14	43	6	...	8	...	2	...
19 " ...	...	8	55	61	103	26	105	26	7	28	5	...	...
20 " ...	17	14	130	118	161	56	230	68	16	43	6	...	...
21 " ...	57	58	304	284	372	179	594	204	43	131	10	...	...
22 " ...	92	58	349	346	388	189	648	246	49	120	25	...	2
23 " ...	132	66	500	357	508	246	724	325	70	155	23	...	...
24 " ...	164	81	545	350	562	260	678	361	97	150	27	...	3
25 " ...	182	81	499	335	533	251	734	398	90	154	26	...	3
26 " ...	180	69	520	322	448	210	637	410	111	126	21	...	3
27 " ...	212	60	461	270	408	193	537	406	95	143	21	...	2
28 " ...	194	69	437	258	302	124	524	354	70	120	18	...	2
29 " ...	168	51	328	195	253	96	437	330	87	97	25	...	6
30 " ...	131	42	340	165	211	101	335	294	74	64	16	...	5
31 " ...	102	33	258	124	168	68	296	261	73	73	4	...	2
32 " ...	106	38	229	120	139	46	262	234	59	58	3	...	4
33 " ...	76	36	181	99	93	54	196	207	45	54	10	...	1
34 " ...	68	17	126	79	108	39	146	147	49	49	7	...	3
35 to 39 years	220	80	562	258	305	142	564	582	181	164	22	...	8
40 " 44 "	103	37	248	117	132	103	288	261	85	84	18	...	18
45 " 49 "	65	38	146	86	111	65	178	179	49	61	11	...	10
50 years and upwards	34	51	157	81	122	82	195	199	60	53	5	...	44
Not stated	...	...	1	1	1	...	1	...	...	...	...	...	...
Total	2,374	990	6,398	4,058	5,462	2,547	8,377	5,499	1,411	1,936	305	125	
Average age—years (1911)	30.88	30.69	29.61	28.40	28.18	28.83	28.75	31.05	31.88	29.64	29.49	43.26	
" " (1910)	31.19	30.07	29.73	28.51	28.29	28.88	28.90	30.94	32.33	29.25	30.23	45.47	
" " (1909)	31.25	30.09	29.80	28.61	28.40	29.12	28.86	31.07	33.10	28.78	28.89	39.88	
" " (1908)	31.01	30.62	29.77	28.83	28.46	29.08	28.89	30.96	32.63	29.00	29.33	41.12	
" " (1907)	31.26	30.12	29.74	28.90	28.01	29.71	28.76	30.93	32.55	29.03	29.19	38.26	

The average age at marriage of brides has slowly risen from 25.56 years in 1907 to 25.74 years in 1911. The figures for the five years are:—1907, 25.56 years; 1908, 25.67 years; 1909, 25.74 years; 1910, 25.77 years, and in 1911, 25.74, while for the five years combined the average age was 25.70 years.

8. Fertility of Marriages.—The quotient obtained by division of the nuptial births registered, say during the five years 1907 to 1911, by the number of marriages registered during the five years 1902 to 1906, *i.e.*, the period antecedent by five years to the period of the births, has been called the "fertility of marriages." This works out at 3.43, or in other words, the number of children to be expected from every marriage in the Commonwealth is under four. This method, while not professing any claim to accuracy, furnishes results which agree fairly well with those found by more elaborate and careful investigation.

9. Registration of Marriages.—In all the States of the Commonwealth marriages may be celebrated either by ministers of religion, whose names are registered for that purpose with the Registrar-General, or by certain civil officers, in most cases district registrars. The percentage of marriages celebrated by ministers of religion has increased from 96.47 per cent. in 1902 to 96.67 per cent. in 1911. The figures for the individual States in 1911 were: New South Wales, 97.64 per cent.; Victoria, 97.36 per cent.; Queensland, 95.72 per cent.; South Australia, 96.41 per cent.; Western Australia, 89.72

per cent.; and Tasmania, 98.92 per cent. The registered ministers in 1911 belonged to thirty-nine different denominations, some of which, however, can hardly be regarded as having any valid existence. The extraordinary number of marriages credited to some denominations, the number of whose adherents, according to the Census returns, was very small indeed, is not inconsistent with the supposition that some of these denominations have been created for the purpose of obtaining the registration necessary to conduct marriages, or to be connected with a so-called "Matrimonial Agency." The figures for 1911 are shewn in the following table:—

MARRIAGES IN EACH DENOMINATION, COMMONWEALTH, 1911.

Denomination.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N. Ter.	Fed. Cap. Ter.	Commonwealth.
Church of England	6,383	2,823	1,451	910	955	513	1	5	13,041
Roman Catholic Church	2,825	1,861	1,042	385	399	198	2	...	6,712
Presbyterian Church of Aust.	2,177	1,990	716	224	227	186	...	...	5,520
Free Presbyterian Church	...	...	...	4	...	...	...	...	4
Independent Presbyterian Ch.	...	198	...	...	...	...	...	...	198
Welsh Presbyterian Church	...	15	...	...	...	...	...	...	15
Methodist Church	2,162	1,749	945	1,339	381	233	1	...	6,810
Congregational Church	639	1,128	136	225	95	178	...	...	2,401
Baptist Church	256	462	220	272	40	122	...	...	1,372
German Baptist Church	...	...	4	...	...	...	...	...	4
Particular Baptist Church	5	...	...	...	...	...	...	...	5
Church of Christ	236	227	21	208	22	14	...	...	728
Christian Brethren	8	...	...	25	...	...	...	...	33
Lutheran Church	14	67	128	239	4	...	...	...	452
Evangelical Lutheran Church	11	...	25	...	2	...	...	...	38
German Lutheran Church	11	...	7	...	...	...	...	...	18
Greek Orthodox Church	5	3	...	...	1	...	...	...	9
Australian Church	...	25	...	...	...	...	...	...	25
Unitarian Church	11	9	...	1	...	...	...	...	21
Moravian Church	...	...	2	...	...	...	...	...	2
Apostolic Church	1	...	10	...	...	...	...	...	11
Catholic Apostolic Church	1	4	6	...	...	...	...	...	11
Christadelphians	...	...	2	...	...	...	...	...	2
Salvation Army	102	37	33	48	15	7	...	...	242
Seventh-Day Adventists	9	6	5	6	4	2	...	...	32
Latter-Day Saints	10	10	...	2	...	...	...	...	22
New Church	2	5	...	...	...	...	...	...	7
Free Church	2	...	...	...	1	...	...	...	3
Free Christian Church	...	36	2	...	...	...	...	...	38
Evangelist	1	...	...	...	...	...	...	...	1
Christian Assembly	...	...	8	...	...	...	...	...	8
Society of Friends	1	1	...	...	...	...	...	...	2
City Mission	...	...	...	...	...	2	...	...	2
Ballarat Town Mission	...	95	...	...	...	...	...	...	95
Joyful News Mission	...	...	169	...	...	...	...	...	169
Christian Mission	...	...	...	...	...	6	...	...	6
Aboriginal Mission	5	...	...	...	...	...	...	...	5
West End Mission	...	...	8	...	...	...	...	...	8
Jewish	41	44	6	3	2	...	...	...	96
Registrar's Office	360	293	221	145	273	16	6	...	1,314
Total	15,278	11,088	5,167	4,036	2,421	1,477	10	5	39,482

10. **Mark Signatures.**—The marriage registers afford some clue, even if an imperfect one, to the illiteracy of the adult population, since a small and constantly diminishing percentage of bridegrooms and brides sign the registers with marks.

(i.) *Males and Females, 1901 to 1911.* For a number of years, with the exception of 1905, 1908 and 1910, mark signatures by males have been slightly more numerous

than those by females, the percentages for the Commonwealth during the past eleven years having been as follows :—

PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, COMMONWEALTH, 1901 to 1911.

Year. ...	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.
Male...	1.35	1.21	1.17	0.95	0.91	0.92	0.81	0.71	0.65	0.56	0.56
Female	1.29	1.11	1.02	0.91	0.93	0.86	0.70	0.73	0.62	0.59	0.54

(ii.) *Mark Signatures in Commonwealth States, 1901 to 1911.* The following table shews that while the Tasmanian percentage has been the highest, and the Victorian the lowest, in each of the eleven years under review, there has been a marked decrease in every State excepting Western Australia :—

PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, COMMONWEALTH, 1901 to 1911.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	F.C. Terr.	C'wealth.
1901 ...	1.34	0.53	2.56	0.95	0.99	4.11	...	...	1.32
1902 ...	1.22	0.61	1.93	1.12	0.69	3.12	14.29	...	1.16
1903 ...	1.10	0.60	1.86	1.22	0.75	2.38	20.83	...	1.10
1904 ...	0.90	0.54	1.72	0.65	0.53	2.85	...	...	0.93
1905 ...	1.12	0.44	1.39	0.83	0.57	2.12	...	...	0.92
1906 ...	0.94	0.43	1.67	0.65	0.66	2.18	25.00	...	0.89
1907 ...	0.87	0.36	1.14	0.55	0.64	2.02	...	...	0.76
1908 ...	0.79	0.33	1.20	0.56	0.82	1.57	...	...	0.72
1909 ...	0.60	0.22	1.16	0.55	0.68	2.07	30.00	...	0.64
1910 ...	0.61	0.29	0.92	0.44	0.52	1.17	29.41	...	0.58
1911 ...	0.54	0.22	0.84	0.46	0.78	1.96	15.00	(a)...	0.55

(a) Part of New South Wales prior to 1911.

A complete disappearance of mark signatures is hardly to be expected, for the available information tends to shew that two-thirds of those who sign with marks are natives of their respective States, who apparently have not made use of the advantages offered to them by the State schools.

§ 3. Deaths.

1. **Male and Female Deaths, 1901 to 1911.**—The total number of deaths registered in the Commonwealth from 1901 to 1911 inclusive, gives an annual average of 26,335 males and 19,345 females, the details being as follows :—

MALE DEATHS, COMMONWEALTH, 1901 to 1911.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Terr.	F. C. Terr.	C'wealth.
1901 ...	9,327	9,035	3,838	2,206	1,653	1,001	83	...	27,143
1902 ...	9,535	9,152	3,924	2,316	1,832	1,044	73	...	27,876
1903 ...	9,428	8,626	3,951	2,171	1,829	1,136	71	...	27,212
1904 ...	8,733	7,992	3,259	2,019	1,823	1,061	52	...	24,939
1905 ...	8,709	8,273	3,499	2,003	1,728	1,061	38	...	25,311
1906 ...	8,715	8,342	3,212	2,053	1,878	1,118	56	...	25,374
1907 ...	9,444	7,977	3,482	1,998	1,866	1,083	89	...	25,939
1908 ...	9,298	8,816	3,500	2,029	1,800	1,112	77	...	26,632
1909 ...	9,184	8,070	3,419	2,030	1,671	1,030	60	...	25,514
1910 ...	9,339	8,128	3,594	2,163	1,760	1,098	72	...	26,154
1911 ...	9,973	8,355	4,060	2,179	1,923	1,037	59	(a) 5	27,591
Rate.(b) 1911	11.59	12.57	12.14	10.43	11.72	10.68	21.57	4.93	11.82

(a) Part of New South Wales prior to 1911.

(b) Number of deaths per 1000 of mean population.

FEMALE DEATHS, COMMONWEALTH, 1901 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aus.	Tas.	North. Terr.	F. Cp. Terr.	C'wealth.
1901 ...	6,694	6,869	2,169	1,768	866	813	8	...	19,187
1902 ...	7,111	7,025	2,280	1,920	991	870	5	...	20,202
1903 ...	7,069	6,969	2,395	1,702	959	980	7	...	20,081
1904 ...	6,627	6,401	1,991	1,700	994	913	7	...	18,633
1905 ...	6,269	6,403	2,004	1,758	981	783	5	...	18,203
1906 ...	6,260	6,895	1,883	1,819	1,206	893	3	...	18,959
1907 ...	6,967	6,562	2,116	1,738	1,065	915	3	...	19,366
1908 ...	6,757	6,950	2,180	1,805	1,079	1,017	6	...	19,794
1909 ...	6,626	6,366	2,111	1,702	1,033	812	8	...	18,658
1910 ...	6,819	6,604	2,150	1,851	980	1,022	10	...	19,436
1911 ...	7,173	6,861	2,484	1,859	1,000	890	6	(a) 5	20,278
Rate, (b) 1911	9.05	10.33	8.88	9.19	8.15	9.55	10.27	6.54	9.40

(a) Part of New South Wales prior to 1911. (b) Number of deaths per 1000 of mean population.

2. **Male and Female Death Rates, 1911.**—The crude male and female death rates for 1911 only are given, viz., in the last line of the preceding tables. Victoria has the highest rate both for males and for females, while South Australia has the lowest male and Western Australia the lowest female death rate. The rates for the two Territories are based on very small numbers, and comparisons with the States are misleading.

Owing to differences in the age constitution of the six States, the crude rates are not, however, strictly comparable, but for the purposes of calculating the "Index of Mortality" (see page 221) a distribution into five age-groups has, however, been made, and the death rates are shewn for males and females in each State in five-year age groups for the year 1911 on page 216.

3. **Death Rates of Various Countries.**—A comparison with foreign States is, for the same reason, apt to shew the Commonwealth in too favourable a light, but even if an allowance for the different age constitution were made, it would still be found occupying a very enviable position. The following table gives particulars of the death rates of various countries for the latest available years:—

DEATH RATES (a) OF VARIOUS COUNTRIES.

Country.	Year.	Crude Death Rate.	Country.	Year.	Crude Death Rate.
New Zealand ...	1911	9.39	German Empire ...	1909	17.2
Commonwealth ...	1911	10.7	France ...	1910	17.9
Denmark ...	1910	12.9	Italy ...	1910	19.6
England and Wales ...	1910	13.5	Austria ...	1910	21.2
Norway ...	1910	13.5	Japan ...	1909	22.0
Netherlands ...	1910	13.6	Jamaica ...	1910	23.1
United Kingdom ...	1910	14.0	Spain ...	1910	23.3
Canada (Ontario) ...	1910	14.0	Hungary ...	1910	23.6
Sweden ...	1910	14.0	Rumania ...	1910	25.2
Scotland ...	1910	15.3	Bulgaria ...	1909	26.6
Belgium ...	1909	15.8	Ceylon ...	1910	27.3
Switzerland ...	1909	16.1	Servia ...	1909	29.3
Finland ...	1910	16.6	Russia, European ...	1904	29.9
Ireland ...	1910	17.1	Chile ...	1910	32.5

(a) Number of deaths per 1000 of mean population.

4. **Total Deaths, 1901 to 1911.**—The total number of deaths in each of the Commonwealth States during the eleven years 1901 to 1911, is shewn below:—

TOTAL DEATHS, COMMONWEALTH, 1901 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aus.	Tas.	North. Terr.	F. Cp. Terr.	C'wealth.
1901 ...	16,021	15,904	6,007	3,974	2,519	1,814	91	...	46,330
1902 ...	16,646	16,177	6,204	4,236	2,823	1,914	78	...	48,078
1903 ...	16,497	15,595	6,346	3,873	2,788	2,116	78	...	47,293
1904 ...	15,360	14,393	5,250	3,719	2,817	1,974	59	...	43,572
1905 ...	14,978	14,676	5,503	3,761	2,709	1,844	43	...	43,514
1906 ...	14,975	15,237	5,095	3,872	3,084	2,011	59	...	44,333
1907 ...	16,411	14,539	5,598	3,736	2,931	1,998	92	...	45,305
1908 ...	16,055	15,766	5,680	3,834	2,879	2,129	83	...	46,426
1909 ...	15,810	14,436	5,530	3,782	2,704	1,842	68	...	44,172
1910 ...	16,158	14,732	5,744	4,014	2,740	2,120	82	...	45,590
1911 ...	17,146	15,216	6,544	4,038	2,923	1,927	65	(a) 10	47,869

(a) Part of New South Wales prior to 1911.

5. **Crude Death Rates, 1901 to 1911.**—The death rate for 1911 shewed an increase on that for 1910 in three States, viz., New South Wales, Queensland, and Western Australia. The rates, with the exception of that for Tasmania, are, however, considerably lower than those experienced during the early years of the decade. The Commonwealth rate for 1911 was considerably lower than in any of the other years of the period under review excepting the years 1909 and 1910.

CRUDE DEATH RATES (a), COMMONWEALTH, 1901 to 1911 (b).

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	F. Cp. Terr.	C'wealth.
1901 ...	11.75	13.22	11.98	11.12	13.39	10.51	19.10	...	12.22
1902 ...	11.98	13.40	12.15	11.90	13.79	10.93	17.05	...	12.49
1903 ...	11.67	12.94	12.33	10.90	12.69	11.73	17.91	...	12.15
1904 ...	10.67	11.97	10.06	10.42	12.04	10.79	13.98	...	11.05
1905 ...	10.18	12.17	10.40	10.45	10.98	10.00	10.42	...	10.88
1906 ...	9.95	12.55	9.50	10.66	12.12	10.91	14.84	...	10.92
1907 ...	10.63	11.86	10.31	10.16	11.47	10.81	24.07	...	10.99
1908 ...	10.20	12.71	10.26	10.14	11.17	11.36	22.71	...	11.07
1909 ...	9.89	11.45	9.70	9.74	10.27	9.68	19.22	...	10.33
1910 ...	9.89	11.49	9.71	10.09	10.11	11.10	24.10	...	10.43
1911 ...	10.37	11.45	10.65	9.82	10.19	10.13	19.58	(c) 5.62	10.66

(a) Number of deaths per thousand of mean population for year. (b) Rates corrected in view of Census Returns. (c) Part of New South Wales prior to 1911.

6. **Male and Female Death Rates, 1901 to 1911.**—The rise in the Commonwealth rate from 1905 to 1907 was due to an increase in the female death rate, while the increase in 1908 was practically limited to the male death rate, as the subjoined table shews. The decrease from 1908 to 1909 was fairly equal for the male and female rates, and the increase in 1910 was due to a rise in the female rate.

MALE AND FEMALE DEATH RATES (a), COMMONWEALTH, 1901 to 1911 (b).

Year.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.
Male rate	13.66	13.83	13.37	12.12	12.14	12.01	12.11	12.24	11.51	11.54	11.82
F'male „	10.64	11.02	10.80	9.88	9.50	9.73	9.77	9.81	9.06	9.24	9.40
Crude to- tal rate	12.22	12.49	12.15	11.05	10.88	10.92	10.99	11.07	10.33	10.43	10.66

(a) Number of deaths per thousand of mean population. (b) Rates corrected in view of Census Returns.

7. Infantile Death Rate.—(i.) *Deaths and Death Rates of Male and Female Infants, 1901 to 1911.* A marked improvement has taken place in the infantile death rate since 1901, in which year it stood at 103.61 per thousand births registered, while in 1911 it had fallen to 68.49 per thousand, a rate lower than that experienced in any previous year. In the following table, which shews both the total number of deaths of children under one year and the rate per thousand births since 1901, males and females are distinguished. The universal experience that during the first few years of life the excess of male births disappears as a consequence of the higher death rate of male infants is shewn by the fact that out of 613,096 male infants born from 1901 to 1911, 56,641 died during their first year of life, while of 582,969 female infants the number who died was only 44,967:—

**NUMBER OF INFANTILE DEATHS AND RATE OF INFANTILE MORTALITY,
COMMONWEALTH 1901 to 1911.**

Year.	Registered Deaths under one year.			Rate of Infantile Mortality (a).		
	Males.	Females.	Total.	Males.	Females.	Total.
1901	5,888	4,778	10,666	112.13	94.73	103.61
1902	6,008	5,004	11,012	114.19	99.76	107.15
1903	6,004	4,959	10,963	119.11	103.23	111.36
1904	4,713	3,800	8,513	88.33	74.87	81.77
1905	4,884	3,696	8,580	90.62	72.41	81.76
1906	5,002	3,981	8,983	90.10	76.01	83.26
1907	4,993	3,952	8,945	88.89	73.38	81.06
1908	4,885	3,791	8,676	85.53	69.65	77.78
1909	4,604	3,559	8,163	78.73	64.02	71.56
1910	4,916	3,822	8,738	81.65	67.53	74.81
1911	4,745	3,624	8,369	75.91	60.72	68.49

(a) Number of deaths under 1 year per 1000 births registered.

(ii.) *Infantile Mortality, 1901 to 1911.* Divided among the States and Territories, the rate of infantile mortality during the last eleven years was as follows:—

RATE (a) OF INFANTILE MORTALITY, COMMONWEALTH, 1901 to 1911.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Terr.	Federal Capital Territory.	Com'-wealth.
1901	103.74	102.94	101.94	100.12	128.89	89.05	62.50	...	103.61
1902	109.74	108.60	100.17	93.76	142.01	79.06	200.00	...	107.15
1903	110.35	106.40	119.88	96.76	141.22	110.83	181.82	...	111.36
1904	82.42	77.92	76.13	70.00	113.02	90.70	212.12	...	81.77
1905	80.55	83.30	75.52	72.80	104.19	80.65	111.11	...	81.76
1906	74.53	92.92	74.68	75.66	110.00	90.19	160.00	...	83.26
1907	88.46	72.60	77.65	66.23	97.51	82.97	185.19	...	81.06
1908	75.20	86.05	70.67	69.50	84.72	75.16	58.82	...	77.78
1909	73.87	71.36	71.50	60.91	78.01	64.91	111.11	...	71.56
1910	74.71	76.88	62.90	70.21	78.18	101.68	200.00	...	74.81
1911	69.46	68.70	65.36	60.60	76.01	73.39	96.77	(b) 33.34	68.49

(a) Number of deaths under 1 year per 1000 births registered.

(b) Part of New South Wales prior to 1911.

The movement has been a fairly regular one, shewing an increase in the rate during 1902 and 1903, and a fall since the latter year, so that the 1909 rate was lower than that for 1902 in every State. The regrettable increase in the Victorian rate for 1908 over that of 1907 was wholly due to the large mortality caused by the phenomenal heat of January, 1908. With the exception of Queensland, where the 1908 rate was exception-

ally low, the 1909 rate was the lowest ever experienced up to that date in any of the States. A further rise occurred in every State in 1910, with the exception of Queensland, which was counterbalanced by a considerable decrease during 1911 in every State but Queensland.

(iii.) *Infantile Mortality in Various Countries and Cities.* Compared with European countries the cities and States of the Commonwealth occupy a very enviable position, and it may be pointed out that experience has shewn that a high birth rate is often, though not invariably, accompanied by a high infantile death rate. The figures in the subjoined tables relate to the latest years for which returns are available:—

RATE (a) OF INFANTILE MORTALITY IN VARIOUS COUNTRIES.

Country.	Year.	Rate of Infantile Mortality. (a)	Crude Birth Rate. (b)	Country.	Year.	Rate of Infantile Mortality. (a)	Crude Birth Rate. (b)
New Zealand ...	1911	56	26.0	Belgium ...	1909	137	23.7
Commonwealth ...	1911	68	27.2	Italy ...	1909	155	32.4
Norway ...	1909	72	26.1	Servia ...	1908	158	36.8
Sweden ...	1909	72	25.6	Spain ...	1907	158	33.6
Ireland ...	1910	95	23.3	Japan ...	1909	166	34.2
Denmark ...	1909	98	28.2	Bulgaria ...	1908	170	40.4
England and Wales	1910	105	25.1	German Empire ...	1909	170	31.1
United Kingdom ...	1909	107	25.7	Ceylon ...	1910	176	39.0
Netherlands ...	1910	108	28.6	Jamaica ...	1910	188	38.6
Scotland ...	1909	108	27.3	Hungary ...	1910	194	35.7
Switzerland ...	1909	115	25.5	Rumania ...	1908	201	40.1
Finland ...	1910	118	30.2	Austria ...	1908	205	33.6
France ...	1909	120	19.6	Russia, European	1904	232	48.5
Canada (Ontario) ...	1910	123	24.9	Chile ...	1910	313	38.4

(a) Number of deaths under 1 year per 1000 births registered. (b) Number of births per 1000 of mean population.

RATE (a) OF INFANTILE MORTALITY IN VARIOUS CITIES.

City.	Year.	Rate of Infantile Mortality. (a)	Crude Birth Rate. (b)	City.	Year.	Rate of Infantile Mortality. (a)	Crude Birth Rate. (b)
Sydney ...	1911	72	28.4	Glasgow ...	1911	139	27.7
Stockholm ...	"	77	22.0	Dublin (Registration area) ...	"	156	28.2
Hobart ...	"	77	29.1	Hamburg ...	"	158	21.7
Melbourne ...	"	78	24.4	Budapest ...	"	161	25.3
Adelaide ...	"	78	27.4	Dresden ...	"	166	20.1
Perth (W.A.) ...	"	79	30.5	Vienna ...	"	166	20.0
Brisbane ...	"	81	29.2	Berlin ...	"	173	20.8
Amsterdam ...	"	91	22.7	Munich ...	"	176	22.4
Rotterdam ...	"	103	28.9	Rio de Janeiro ...	"	182	27.4
The Hague ...	"	107	24.6	Prague ...	"	186	16.9
Copenhagen ...	"	113	24.6	Breslau ...	"	207	26.9
Christiania ...	"	116	22.5	Trieste ...	"	215	29.6
Edinburgh ...	"	118	21.3	St. Petersburg ...	"	231	28.2
Paris ...	"	118	17.2	Moscow ...	"	321	35.2
Belfast ...	"	128	28.4				
London ...	"	129	24.8				

(a) Number of deaths under 1 year per 1000 births registered. (b) Number of births per 1000 of mean population.

(iv.) *The Effect of Infantile Mortality on Birth Rate.* It has been contended by certain investigators that the birth-rate question is intimately related to that of infantile mortality, and that in many cases a declining birth rate may be to a large extent accounted for by a decline in the infantile death rate, since, in the case in which an infant has survived, the period elapsing before the birth of the next child is likely to be longer than in the case in which the infant has died. It may indeed be readily admitted that in any community the birth rate may be affected in a definite way by variations of infantile mortality, but careful investigation of the question serves to shew that, whether considered from the theoretical aspect with a view to determining the *maximum* and the *probable* effects which a given change in the rate of infantile mortality would produce in the birth rate, or from the practical point of view by observing the fluctuations in the birth rates of various countries which have been collateral with changes in their rates of infantile mortality, there is little ground for the contention that the rate of infantile mortality is an important factor in determining the variations in the birth rate. One calculation which has been made on the basis of normal Australian conditions indicates that the *maximum* effect of increasing the rate of infantile mortality 100 per cent. would, in the absence of other disturbing causes, be to increase the birth rate by only $3\frac{1}{2}$ per cent., whilst the *probable* effect would be considerably less than this. In other words, the *maximum* effect of an increase in the rate of infantile mortality from 100 to 200 per 1000 births would be to increase the birth rate from say 30 to 31 per 1000 of population. It may be noted too, that although in some countries an increase in birth-rate accompanies an increase in the rate of infantile mortality, in others the birth rate would appear to be quite unaffected by such an increase, while in the case of England and Wales, Scotland, and Ireland, the tendency apparently exhibited is for an increase in the rate of infantile mortality to be associated with a decrease in the birth rate. The conclusion which these results appear to warrant is that although infantile mortality undoubtedly tends on the whole to increase the birth rate, the practical effect produced is so slight that the existence of such a relation may in any instance be quite masked by more important causes of variation.

8. **Deaths in Age-Groups, 1901 to 1911.**—A distribution into age-groups has been made of the 502,482 deaths which occurred in the Commonwealth from 1901 to 1911, and the results are tabulated for each State. It is, however, sufficient here to shew the results for the Commonwealth as a whole, which are as follows:—

DEATHS IN AGE-GROUPS, COMMONWEALTH, 1901 to 1911.

Ages.	Males.	Females.	Total.	Percentage of Total Males.	Percentage of Total Females.	Percentage of Total.
Under 1 year ...	56,642	44,966	101,608	19.55	21.13	20.22
1 year and under 5 ...	16,683	15,260	31,943	5.76	7.17	6.36
5 years and under 20 ...	16,741	14,899	31,640	5.78	7.00	6.30
20 years and under 40 ...	39,898	35,017	74,915	13.77	16.46	14.91
40 years and under 60 ...	57,604	33,643	91,247	19.89	15.81	18.16
60 years and under 65 ...	16,592	10,145	26,737	5.73	4.77	5.32
65 years and over ...	84,994	58,773	143,767	29.34	27.62	28.61
Age not stated ...	531	94	625	0.18	0.04	0.12
Total ...	289,685	212,797	502,482	100.00	100.00	100.00

9. Deaths at Single Ages and in Age-Groups, 1911.—The 47,869 deaths which were registered in the Commonwealth in the year 1911 will be found tabulated under single years, and in groups of five years for each State and Territory, in "Bulletin No. 29, Commonwealth Demography, 1911." It has been thought advisable to tabulate the deaths during the first two years of life in greater detail. The first month has, therefore, been shewn in weeks, and the twenty-three months up to the end of the second year in months. This tabulation shews a great number of children dying during the first week, the number gradually diminishing towards the end of the second year. The particulars relating to the Commonwealth are given in the following table:—

DEATHS AT SINGLE AGES AND IN AGE-GROUPS, 1911.
COMMONWEALTH.

Ages.	Males.	Females.	Total.	Ages.	Males.	Females.	Total.
Under 1 week ...	1,481	1,085	2,566	10 years ...	88	69	157
1 week and under 2 ...	310	216	526	11 " ...	64	64	128
2 weeks " " 3 ...	232	152	384	12 " ...	63	65	128
3 " " " 4 ...	195	124	319	13 " ...	70	54	124
				14 " ...	71	70	141
Total under one month ...	2,218	1,577	3,795	Total 10 years and under 15	356	322	678
1 month and under 2 ...	462	328	790	15 years ...	76	74	150
2 months " " 3 ...	344	284	628	16 " ...	112	91	203
3 " " " 4 ...	289	218	507	17 " ...	102	92	194
4 " " " 5 ...	242	225	467	18 " ...	122	114	236
5 " " " 6 ...	207	198	405	19 " ...	143	120	263
6 " " " 7 ...	205	166	371				
7 " " " 8 ...	189	155	344	Total 15 years and under 20	555	491	1,046
8 " " " 9 ...	181	131	312	20 years ...	146	130	276
9 " " " 10 ...	140	120	260	21 " ...	172	146	318
10 " " " 11 ...	118	122	240	22 " ...	190	162	342
11 " " " 12 ...	150	100	250	23 " ...	166	166	332
Total under 1 year ...	4,745	3,624	5,369	24 " ...	186	163	349
12 months and under 13 ...	234	221	455	Total 20 years and under 25	860	767	1,617
13 " " " 14 ...	65	55	120	25 years ...	188	161	349
14 " " " 15 ...	66	68	134	26 " ...	181	164	345
15 " " " 16 ...	61	55	116	27 " ...	151	153	304
16 " " " 17 ...	50	35	85	28 " ...	170	159	329
17 " " " 18 ...	41	34	75	29 " ...	175	170	345
18 " " " 19 ...	42	47	89				
19 " " " 20 ...	32	24	56	Total 25 years and under 30	865	807	1,672
20 " " " 21 ...	34	28	62	30 years ...	203	161	364
21 " " " 22 ...	36	21	57	31 " ...	169	152	321
22 " " " 23 ...	30	27	57	32 " ...	185	164	349
23 " " " 24 ...	31	19	50	33 " ...	184	140	324
				34 " ...	157	155	312
Total under 2 years ...	5,467	4,258	9,725	Total 30 years and under 35	898	772	1,670
2 years ...	290	289	579	35 years ...	196	162	358
3 " ...	216	172	388	36 " ...	185	196	381
4 " ...	153	152	305	37 " ...	175	155	330
Total under 5 years ...	6,126	4,871	10,997	38 " ...	230	171	401
5 years ...	133	133	266	39 " ...	200	153	353
6 " ...	126	89	215				
7 " ...	109	89	198	Total 35 years and under 40	286	837	1,823
8 " ...	74	80	154				
9 " ...	72	67	139				
Total 5 years and under 10	514	458	972				

DEATHS AT SINGLE AGES AND IN AGE-GROUPS, 1911—Continued.

Ages.	Males.	Females.	Total.	Ages.	Males.	Females.	Total.
40 years	276	190	466	75 years	453	350	803
41 " "	192	128	320	76 " "	430	366	796
42 " "	284	205	489	77 " "	400	319	719
43 " "	258	140	398	78 " "	462	337	799
44 " "	247	136	383	79 " "	406	258	664
Total 40 years and under 45	1,257	799	2,056	Total 75 years and under 80	2,151	1,630	3,781
45 years	302	159	461	80 years	420	300	720
46 " "	250	167	417	81 " "	309	215	524
47 " "	286	174	460	82 " "	310	240	550
48 " "	334	191	525	83 " "	257	195	452
49 " "	296	202	498	84 " "	272	192	464
Total 45 years and under 50	1,468	893	2,361	Total 80 years and under 85	1,568	1,142	2,710
50 years	386	206	592	85 years	219	180	399
51 " "	299	158	457	86 " "	158	129	287
52 " "	362	193	555	87 " "	152	106	258
53 " "	306	163	469	88 " "	109	103	212
54 " "	320	199	519	89 " "	78	82	160
Total 50 years and under 55	1,673	919	2,592	Total 85 years and under 90	716	600	1,316
55 years	343	194	537	90 years	75	78	153
56 " "	334	187	521	91 " "	58	57	115
57 " "	294	152	446	92 " "	54	48	102
58 " "	313	159	472	93 " "	24	28	52
59 " "	289	179	468	94 " "	26	22	48
Total 55 years and under 60	1,573	871	2,444	Total 90 years and under 95	237	233	470
60 years	421	209	630	95 years	15	11	26
61 " "	247	159	406	96 " "	12	13	25
62 " "	324	198	522	97 " "	9	11	20
63 " "	323	199	522	98 " "	2	9	11
64 " "	310	197	507	99 " "	2	3	5
Total 60 years and under 65	1,625	962	2,587	Total 95 yrs. and under 100	40	47	87
65 years	396	236	632	100 years	5	6	11
66 " "	341	232	573	101 " "	4	2	6
67 " "	425	277	702	102 " "	2	1	3
68 " "	376	317	693	103 " "	1	2	3
69 " "	415	258	673	104 " "	1	1	1
Total 65 years and under 70	1,953	1,320	3,273	105 " "	1	1	2
70 years	515	325	840	108 " "	1	...	1
71 " "	373	244	617	Total 100 years and over...	14	13	27
72 " "	375	278	653	Age not stated	55	10	65
73 " "	418	309	727	Total all ages	27,591	20,278	47,869
74 " "	430	358	788				
Total 70 years and under 75	2,111	1,514	3,625				

The following tables shew the death rate per 1000 living at each age. The rates for Northern and Federal Capital Territories are not given, as the figures on which they are based are so small as to lead to erroneous conclusions:—

DEATH RATES PER 1000 LIVING IN VARIOUS AGE GROUPS, 1911.

MALES.

Age Group.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
0 to 4 years	23.44	22.63	22.11	19.04	27.37	20.99	22.77
5 " 9 "	1.93	2.20	2.54	2.18	2.68	2.49	2.21
10 " 14 "	1.72	1.61	1.72	1.01	2.18	1.51	1.61
15 " 19 "	2.26	2.32	3.12	2.34	2.32	1.78	2.39
20 " 24 "	3.33	3.39	5.31	2.32	4.84	3.97	3.67
25 " 29 "	3.88	3.72	5.65	3.99	5.32	4.86	4.25
30 " 34 "	4.92	4.88	6.00	4.67	6.59	4.34	5.19
35 " 39 "	5.78	6.04	7.46	6.81	7.64	6.14	6.38
40 " 44 "	8.49	7.59	10.35	7.72	11.16	6.38	8.66
45 " 49 "	10.63	9.29	13.91	9.50	14.64	8.25	10.86
50 " 54 "	14.12	15.76	19.09	12.04	17.93	14.16	15.37
55 " 59 "	22.89	20.02	23.19	18.02	22.51	14.04	21.29
60 " 64 "	29.97	34.04	30.30	30.11	34.38	28.38	31.50
65 " 69 "	46.25	49.65	55.82	47.08	44.39	44.54	48.54
70 " 74 "	75.03	74.36	67.26	57.61	74.30	54.72	71.29
75 " 79 "	120.30	111.78	105.69	103.03	103.85	114.16	113.10
80 " 84 "	184.38	184.14	184.55	152.33	185.04	128.57	179.26
85 " 89 "	263.84	268.77	227.27	242.86	272.73	367.65	266.32
90 and over	384.94	365.45	238.81	351.06	250.00	507.94	367.42

FEMALES.

0 to 4 years	19.27	17.89	19.42	16.40	20.04	19.35	18.69
5 " 9 "	1.67	2.19	2.43	1.63	2.63	2.23	2.01
10 " 14 "	1.25	1.74	1.64	1.13	1.69	2.21	1.51
15 " 19 "	1.97	2.19	2.55	2.23	1.92	2.84	2.18
20 " 24 "	3.02	3.71	3.86	3.68	3.67	3.99	3.48
25 " 29 "	3.93	4.04	4.64	5.01	4.69	4.64	4.22
30 " 34 "	4.53	5.14	4.56	4.91	4.61	5.06	4.78
35 " 39 "	5.55	6.02	6.74	5.80	5.55	6.48	5.91
40 " 44 "	6.05	6.82	7.44	5.46	6.08	3.66	6.34
45 " 49 "	7.90	8.26	8.18	8.75	7.32	7.34	8.11
50 " 54 "	11.18	11.23	11.34	8.40	12.29	7.91	10.83
55 " 59 "	15.20	14.65	16.51	11.67	14.48	11.71	14.67
60 " 64 "	21.91	21.75	22.83	20.80	22.02	20.27	21.79
65 " 69 "	40.96	34.26	33.47	32.88	31.78	37.67	36.48
70 " 74 "	56.42	59.91	57.47	49.13	56.44	54.15	57.03
75 " 79 "	102.88	103.66	82.30	83.01	82.50	84.75	98.06
80 " 84 "	160.02	149.97	148.03	142.01	132.45	142.47	151.11
85 " 89 "	185.77	223.78	222.67	224.44	156.86	284.62	213.83
90 and over	316.50	361.45	458.55	253.85	384.62	340.91	335.62

PERSONS.

0 to 4 years	21.38	20.31	20.79	17.74	23.74	20.19	20.77
5 " 9 "	1.83	2.19	2.48	1.91	2.66	2.36	2.11
10 " 14 "	1.49	1.67	1.68	1.07	1.93	1.89	1.58
15 " 19 "	2.12	2.26	2.84	2.29	2.13	2.31	2.29
20 " 24 "	3.20	3.55	4.64	3.02	4.35	3.98	3.58
25 " 29 "	3.90	3.88	5.21	4.49	5.07	4.74	4.24
30 " 34 "	4.73	5.02	5.41	4.79	5.79	4.69	4.99
35 " 39 "	5.67	6.03	7.14	6.31	6.81	6.30	6.16
40 " 44 "	7.35	7.21	9.13	6.60	9.33	5.10	7.58
45 " 49 "	9.41	8.79	11.65	9.13	12.15	7.82	9.62
50 " 54 "	12.83	13.60	16.16	10.33	15.98	11.28	13.38
55 " 59 "	19.52	17.38	20.62	15.11	19.61	13.69	18.34
60 " 64 "	26.32	27.87	27.34	25.59	29.78	24.45	27.02
65 " 69 "	43.84	41.71	46.43	40.07	50.90	41.05	42.83
70 " 74 "	66.65	66.85	63.49	53.38	66.87	54.43	64.56
75 " 79 "	112.77	107.79	96.63	92.42	95.29	98.90	106.09
80 " 84 "	173.34	168.68	167.56	147.28	165.43	135.57	166.22
85 " 89 "	223.54	246.55	225.05	232.01	222.22	327.07	239.55
90 and over	347.01	363.35	349.59	294.64	292.68	439.25	350.75

The tables show a high death rate for children under five years of age, which rapidly diminishes until at ages 10 to 14, a rate of 1.58 per 1000 was experienced, which was the lowest at any age. The rate then gradually increases with increasing age until, at the ages 90 and over, more than one-third die every year.

10. **Deaths of Centenarians, 1911.**—Particulars as to the twenty-seven persons who died in 1911, aged 100 years and upwards, are given in the following table. It must, of course, be understood that while the Registrars-General of the various States take the greatest care to have statements as to abnormally high ages verified as far as possible, no absolute reliance can be placed on the accuracy of the ages shewn, owing to the well-known tendency of very old people to overstate their ages. The fact must not be lost sight of in connection with this question, that while parish registers in the United Kingdom often date very far back, compulsory registration of births dates practically only from 1874, the Act passed in 1836 having left many loop-holes open for those unwilling to register the births of their children.

DEATHS OF CENTENARIANS, 1911.—COMMONWEALTH.

MALES.

Age	Locality where Death occurred.	State.	Cause of Death.	Occupation.	Birth-place.	Length of Residence in Commonwealth.
Yrs.						
108	Deloraine	Tasmania	Senility	Labourer	England	95 years
105	Gulgong	N.S.W.	Aortic stenosis	Storekeeper	China	70
103	Collarenebri	"	Rodent ulcer	Selector	N.S. Wales	Native
102	New Norfolk	Tasmania	Senility	Labourer	England	73 years
102	Dookie	Victoria	"	Old age pen	Ireland	50
101	Whitfield	"	Gangrene	Not stated	Scotland	70
101	Corindhap	"	Senility	Old age pen	N.S. Wales	Native
101	Wellington	N.S.W.	"	Gardener	China	60 years
101	Camden Cottage Hospital	"	"	Farmer	England	56
100	Evandale	Tasmania	"	Labourer	"	75
100	Port Macquarie	N.S.W.	"	Farmer	"	67
100	Petersham	"	Heart disease	"	"	12
100	Ascot Vale	Victoria	Senility	Old age pen	"	75
100	Bacchus Marsh	"	"	Farmer	Germany	59

FEMALES.

105	Benevolent Asy., Cheltenham	Victoria	Senility	"	Scotland	60 years
104	Tenterfield	N.S.W.	"	"	"	58
103	Randwick	"	Diarrhoea	"	"	61
103	South Yarra	Victoria	Influenza	"	England	71
102	Avenel	"	Senility	"	Ireland	64
101	Maffra	"	"	"	"	74
101	Maryborough	Queensland	"	"	"	48
100	Burwood	N.S.W.	"	"	N.S.W.	Native
100	Ashfield	"	"	"	England	78 years
100	Waterloo	"	"	"	"	75
100	Coburg	Victoria	"	"	Ireland	53
100	Melbourne, South	"	"	"	Scotland	60
100	Clermont	Queensland	"	"	Ireland	57

11. Length of Residence in the Commonwealth of Persons who Died in 1911.—

The length of residence in the Commonwealth of all persons whose deaths were registered in the year 1911 has been tabulated for all the States, and a summary of the results is shewn below:—

LENGTH OF RESIDENCE IN COMMONWEALTH OF PERSONS WHO DIED IN 1911.

Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.	Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.
Born in the C'wealth...	14,476	12,279	26,755	Resident 25 to 29 years	1,046	559	1,605
Resident under 1 year	293	101	394	" 30 to 34 "	991	464	1,455
" 1 year	94	33	127	" 35 to 39 "	652	359	1,011
" 2 years	107	88	145	" 40 to 44 "	829	466	1,295
" 3 "	74	30	104	" 45 to 49 "	1,107	784	1,841
" 4 "	47	22	69	" 50 to 54 "	1,616	1,271	2,887
" 5 "	42	21	63	" 55 to 59 "	1,720	1,527	3,247
" 6 "	35	15	50	" 60 to 64 "	775	717	1,492
" 7 "	32	15	47	" 65 yrs. & over	497	482	979
" 8 "	28	15	43	Length of residence not stated...	2,029	561	2,590
" 9 "	21	12	33				
" 10 to 14 years...	200	76	276				
" 15 to 19 "	241	102	343				
" 20 to 24 "	639	379	1,018	Total ...	27,591	20,278	47,869

12. Birthplaces of Persons who Died in 1911.—In the following table are shewn the birthplaces of persons whose deaths were registered in 1911:—

BIRTHPLACES OF PERSONS WHO DIED IN 1911.

COMMONWEALTH.

Birthplaces.	Males.	Females.	Total.	Birthplaces.	Males.	Females.	Total.
AUSTRALASIA—				Java ...	9	1	10
Commonwealth of				Philippine Islands ...	13	...	13
Australia—				Syria ...	7	2	9
New South Wales ...	5,541	4,653	10,194	Other Asiatic Countries ...	18	...	18
Victoria ...	4,480	3,789	8,269				
Queensland ...	1,508	1,298	2,806	AFRICA—			
South Australia ...	1,379	1,232	2,611	Cape of Good Hope ...	2	2	4
Western Australia ...	640	479	1,119	Mauritius ...	10	5	15
Tasmania ...	925	825	1,750	S. Africa (undefined) ...	13	9	22
Northern Territory ...	3	3	6	Other African			
				Brit. Possessions ...	4	2	6
New Zealand ...	126	79	205	Egypt ...	2	1	3
EUROPE—				AMERICA—			
England ...	5,486	3,469	8,955	Canada ...	73	15	88
Wales ...	153	72	225	Jamaica ...	2	4	6
Scotland ...	1,666	1,112	2,778	Newfoundland ...	1	1	2
Ireland ...	2,837	2,528	5,365	Other American			
Isle of Man ...	11	4	15	Brit. Possessions ...	2	1	3
Other European				Argentine Republic ...	1	...	1
Brit. Possessions ...	29	22	51	Brazil ...	1	1	2
Austria-Hungary ...	36	3	39	United States of			
Belgium ...	10	...	10	America ...	72	18	90
Denmark ...	103	25	128	Other American			
France ...	73	18	91	Countries ...	33	11	44
Germany ...	597	274	871				
Greece ...	19	2	21	POLYNESIA—			
Italy ...	81	9	90	Fiji ...	2	1	3
Netherlands ...	9	2	11	Friendly Islands ...	...	1	1
Norway ...	72	5	77	Papua ...	42	2	44
Portugal ...	11	1	12	Other Polynesian			
Russia ...	70	6	76	Brit. Possessions ...	3	...	3
Spain ...	10	2	12	New Caledonia ...	3	3	6
Sweden ...	98	12	110	New Hebrides ...	10	1	11
Switzerland ...	44	15	59	Other Polynesian			
Other European				Islands ...	2	2	4
Countries ...	3	1	4	South Sea Islands			
				(so described) ...	29	4	33
ASIA—							
British India ...	79	25	104	At Sea ...	44	39	83
Ceylon ...	4	...	4				
Hong Kong ...	2	...	2	Not stated...	648	179	827
Straits Settlements ...	10	3	13				
Other Asiatic British				Total Deaths...	27,591	20,278	47,869
Possessions ...	7	...	7				
China ...	353	3	356				
Japan ...	70	2	72				

13. Occupations of Male Persons who Died in 1911.—Information as to the occupations of the 27,591 males who died in the Commonwealth in 1911, is contained in the following statement:—

OCCUPATIONS OF DECEASED MALES, 1911.

COMMONWEALTH.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
CLASS I.—PROFESSIONAL.		Groceries, drinks, narcotics, and stimulants	
General Government	103	Living animals	30
Local Government	25	Manures	1
Defence	66	Leather, hides, etc.	3
Law and order	171	Wool and tallow	10
Religion	88	Hay, corn, etc.	29
Charity	2	Timber	20
Health	172	Wood and coal	25
Literature	39	Glass and earthenware	5
Science	14	Gold, silver, and precious stones	7
Civil and mechanical engineering, architecture and surveying	97	Ironmongery	27
Education	108	Merchants	73
Fine arts	31	Shopkeepers and assistants	190
Music	29	Dealers and hawkers	102
Amusements	83	Agents and brokers	97
		Clerks, bookkeepers, etc.	488
		Commercial travellers and salesmen	149
Total Professional	1,028	Others engaged in commercial pursuits	102
		Speculators on chance events	7
		Storage	3
CLASS II.—DOMESTIC.		Total Commercial	2,120
Hotelkeepers and assistants	258	CLASS IV.—TRANSPORT AND COMMUNICATION.	
Others engaged in providing board and lodging	59	Railway traffic	361
House servants	148	Tramway traffic	153
Coachmen and grooms	93	Road traffic	494
Hairdressers	70	Sea and river traffic	600
Laundrymen	11	Postal service	73
Others engaged in domestic occupations	118	Telegraph and telephone service	22
Total Domestic	757	Messengers, etc.	11
CLASS III.—COMMERCIAL.		Total Transport & Communication	1,614
Banking and finance	65	CLASS V.—INDUSTRIAL.	
Insurance and valuation	56	Books and publications	118
Land and household property	42	Musical instruments	9
Property rights	11	Prints, pictures, and art materials	11
Books, publications and advertising	28	Ornaments and small wares	14
Musical instruments	2	Medals	8
Ornaments and small wares	4	Watches and clocks	31
Machines, tools, and implements	4	Surgical instruments	1
Harness and saddlery	1	Arms and ammunition	4
Ships and boats	2	Engines, machines, tools, etc.	134
Building materials	3	Carriages and vehicles	126
Furniture	7	Harness, saddlery, and leatherware	86
Chemicals	2	Ships, boats, and equipment	47
Paper and stationery	7	Furniture	100
Textile fabrics	100	Building material	82
Dress	12	Chemicals	2
Animal food	212		
Vegetable food	67		

OCCUPATIONS OF DECEASED MALES, 1911—Continued.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
INDUSTRIAL—Continued.		CLASS VI.—AGRICULTURAL, PASTORAL, MINING PURSUITS, ETC.	
Textile fabrics	22	Agricultural	2,724
Dress	369	Pastoral	696
Fibrous materials	14	Dairying	67
Animal food	17	Fisheries, capture or destruction of	
Vegetable food	170	wild animals, or acquisition of	
Groceries, drinks, narcotics, and		products yielded thereby	218
stimulants	60	Forestry	71
Wool-scouring, soap, and candles	68	Water conservation and supply ...	15
Workers in wood not elsewhere		Mines and quarries	1,796
classified	14		
Fodder	1		
Paper	1		
Stone, clay, glass	58	Total Primary Producers	5,587
Jewellery and precious stones ...	20		
Metals, other than gold and silver	344		
Gas, electric lighting	35		
		CLASS VII.—INDEFINITE.	
Buildings—		Independent means, etc.	1,163
Builders	89	Undefined or unknown	486
Stonemasons	97		
Bricklayers	86		
Slaters	2	Total Indefinite	1,649
Carpenters	446		
Plasterers	49		
Painters and glaziers	171		
Plumbers	76	CLASS VIII.—DEPENDENTS.	
Signwriters	6	Dependent relatives (including per-	
Others	1	sons under 20 years of age with	
Roads, railways, and earthworks...	54	no specified occupation)	7,193
Disposal of the dead	12	Dependent upon the State or upon	
Disposal of refuse	32	public or private support	264
Other industrial workers—			
Manufacturers	28		
Engineers, firemen	330	Total Dependents	7,457
Contractors	133		
Labourers, undefined	3,789		
Others	17		
Total Industrial	7,379	Total Male Deaths	27,591

14. **Index of Mortality.**—The death rates, those for age-groups on pages 211 and 216 excepted, so far shewn are crude rates, *i.e.*, they simply shew the number of deaths per thousand of mean population, without taking the age constitution of that population into consideration. It is, however, a well-known fact that the death rate and age constitution of a people are intimately related, thus, other conditions being equal, the death rate of a country will be lower if it contain a large percentage of young people (not infants). In order to have a comparison of the mortality of various countries on a uniform basis, so far as age constitution is concerned, the International Statistical Institute in its 1895 session recommended the universal adoption of the population of Sweden in five age-groups, as ascertained at the Census of 1890, as the standard population by which this "Index of Mortality," as distinguished from the crude death rate, should be ascertained. The calculation for 1911 is shewn below for each of the States and Territories and for the Commonwealth, the distribution of the mean population of 1911 into age-groups being in accordance with the distribution as found at the Census of 1911:—

INDEX OF MORTALITY, 1911.—(STATES AND COMMONWEALTH.)

Age-Group.	Mean Population, 1911, distributed according to Results of Census of 1911.	Number of Deaths, 1911.	No. of Deaths per 1000 of Mean Population, 1911, in each Age-Group.	Age Distribution per 1000 of Standard Population.	Index of Mortality.
NEW SOUTH WALES.					
Under 1 year	45,008	3,303	73.39	25.5	1.87
1 year and under 20	649,294	1,014	2.95	398.0	1.17
20 years " 40	555,387	2,339	4.21	269.6	1.14
40 " " 60	300,022	3,363	11.21	192.3	2.16
60 " and upwards	103,566	6,227	60.13	114.6	6.89
Total	1,653,257	17,146	10.37	1,000.0	13.23
VICTORIA.					
Under 1 year	31,177	2,269	72.78	25.5	1.86
1 year and under 20	510,509	1,501	2.94	398.0	1.17
20 years " 40	421,230	1,890	4.49	269.6	1.21
40 " " 60	269,920	2,859	10.59	192.3	2.04
60 " and upwards	96,481	6,697	69.41	114.6	7.95
Total	1,329,317	15,216	11.45	1,000.0	14.23
QUEENSLAND.					
Under 1 year	16,378	1,111	67.83	25.5	1.73
1 year and under 20	251,158	892	3.55	398.0	1.41
20 years " 40	201,679	1,102	5.46	269.6	1.47
40 " " 60	109,593	1,452	13.25	192.3	2.55
60 " and upwards	35,544	1,988	55.93	114.6	6.41
Total	614,352	6,544	10.65	1,000.0	13.57
SOUTH AUSTRALIA.					
Under 1 year	10,557	670	63.47	25.5	1.62
1 year and under 20	160,304	400	2.50	398.0	0.99
20 years " 40	136,363	602	4.41	269.6	1.19
40 " " 60	75,217	731	9.72	192.3	1.87
60 " and upwards	28,777	1,635	56.82	114.6	6.51
Total	411,218	4,038	9.82	1,000.0	12.18
WESTERN AUSTRALIA.					
Under 1 year	7,578	615	81.16	25.5	2.07
1 year and under 20	105,052	401	3.82	398.0	1.52
20 years " 40	104,963	583	5.55	269.6	1.50
40 " " 60	57,762	728	12.60	192.3	2.42
60 " and upwards	11,542	596	52.04	114.6	5.96
Total	286,807	2,923	10.19	1,000.0	13.47
TASMANIA.					
Under 1 year	5,290	399	75.43	25.5	1.92
1 year and under 20	80,935	237	2.93	398.0	1.17
20 years " 40	58,267	281	4.82	269.6	1.30
40 " " 60	33,997	298	8.77	192.3	1.69
60 " and upwards	11,837	712	60.15	114.6	6.89
Total	190,316	1,927	10.13	1,000.0	13.97
NORTHERN TERRITORY.					
Under 1 year	30	3	100.00	25.5	2.55
1 year and under 20	610	2	3.28	398.0	1.31
20 years " 40	885	6	6.78	269.6	1.83
40 " " 60	1,492	33	22.12	192.3	4.25
60 " and upwards	302	21	69.54	114.6	7.97
Total	3,319	65	19.58	1,000.0	17.91
FEDERAL CAPITAL TERRITORY.					
Under 1 year	41	1	24.39	25.5	0.62
1 year and under 20	730	3	4.11	398.0	1.64
20 years " 40	547	1	1.83	269.6	0.49
40 " " 60	331	2	6.04	192.3	1.16
60 " and upwards	131	3	22.90	114.6	2.62
Total	1,780	10	5.62	1,000.0	6.53

INDEX OF MORTALITY, 1911.—(STATES AND COMMONWEALTH)—Continued.

Age-Group.	Mean Population, 1911, distributed according to Results of Census of 1911.	Number of Deaths, 1911.	No. of Deaths per 1000 of Mean Population, 1911, in each Age-Group.	Age Distribution per 1000 of Standard Population.	Index of Mortality
COMMONWEALTH.					
Under 1 year	116,107	8,371	72.10	25.5	1.84
1 year and under 20	1,758,510	5,350	3.04	398.0	1.21
20 years " 40	1,479,497	6,804	4.60	269.6	1.24
40 " 60	848,204	9,465	11.16	192.3	2.15
60 " and upwards	288,048	17,879	62.07	114.6	7.11
Total	4,490,366	47,869	10.66	1,000.0	13.55

NOTE.—The small number of persons whose ages were not ascertained at the 1911 Census have been proportionately distributed among the various age-groups, and the same plan has been followed in regard to the 65 persons who died in 1911, and whose ages were not stated in the certificates of death.

It will be seen that Victoria has the highest index and crude rates, while South Australia has the lowest index and lowest crude rate. The range of the indexes is slightly larger than that of the crude death rates, thus, while the latter in 1911 rose from 9.82 per thousand in South Australia to 11.45 per thousand in Victoria, a range of 1.63 per thousand, the indexes varied from 12.18 per thousand in South Australia to 14.23 per thousand in Victoria, a range of 2.05 per thousand.

For purposes of comparison with previous years the index of mortality is shown in the following table for each of the ten years 1902-1911 :—

INDEX OF MORTALITY, 1902-1911 (STATES AND TERRITORIES).

Year.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Northern Territory.	Federal Capital Territory.	Com'-wealth.
1902	15.32	15.90	15.68	15.50	17.55	14.25	...	...	15.70
1903	14.89	15.38	15.72	13.99	16.11	14.73	...	...	15.21
1904	13.90	14.46	12.89	13.45	15.49	14.13	...	...	14.11
1905	13.23	14.80	13.72	13.49	14.17	12.95	...	...	13.94
1906	12.91	15.26	12.44	13.78	15.84	14.10	...	...	13.94
1907	13.66	14.55	13.52	13.12	14.94	14.10	...	...	13.97
1908	13.13	15.58	13.37	12.89	14.81	14.46	...	...	14.10
1909	12.61	14.11	12.57	12.27	13.91	12.32	...	...	13.15
1910	12.48	14.15	12.60	12.50	13.48	13.62	...	...	13.17
1911	13.23	14.23	13.57	12.18	13.47	12.97	*17.91	†6.53	13.55

* Included in South Australia prior to 1911.

† Part of New South Wales prior to 1911.

A comparison of the above figures with the crude death rates given on a previous page shews that while the crude rate was highest in Victoria eight times in 10 years and twice in Western Australia, the index was highest in Victoria five times and in Western Australia five times in the same period. South Australia had the lowest index four times, and Queensland and Tasmania each three times. The high index in Victoria is due to the large proportion of persons over 60 years of age, and in Western Australia to the heavy mortality in the early period of life.

15. **Causes of Death.**—(i.) *Changes in Classification from 1903 to 1906.* The causes of death were classified in all the States of the Commonwealth to the end of 1903 according to the system originally devised by Dr. William Farr, and modified in 1886 by Dr. William Ogle. A conference of the State Statisticians, held at Hobart in January, 1902, decided to substitute for that system the classification adopted since 1901 by the Registrar-General of England. While New South Wales, Queensland, and Tasmania remodelled their vital statistics on that plan, Victoria, South Australia, and Western Australia continued to tabulate according to the Farr-Ogle system, and a comparison of the causes of death in the six States during the years 1903, 1904, 1905, and 1906 is, therefore, a matter of extreme difficulty. The differences in tabulation will be seen in the following statement :—

TABULATION OF CAUSES OF DEATH.

State.	1902.	1903.	1904.	1905.	1906.	State.	1902.	1903.	1904.	1905.	1906.
N.S.W. ...	Old	Old	Old	New	International	S. Australia	Old	Old	Old	Old	Old
Victoria ...	Old	Old	Old	Old	Old	W. Australia	Old	Old	Old	Old	Old
Queensland	Old	New	New	New	New	Tasmania ...	Old	New	New	New	New

Old= Farr-Ogle classification. New= New classification by Registrar-General of England.
International—See next paragraph

(ii.) *The Classification of the International Institute of Statistics.* At a conference held in Melbourne in November and December, 1906, the Commonwealth Statistician recommended the adoption of the classification of the International Institute of Statistics, generally known as the Bertillon Index, and after some discussion that recommendation was accepted, a course which has met with wide approval in medical circles. This index, as also the one now used by the Registrar-General of England, is based on the original Farr-Ogle classification, but approximates more closely to the present English system than to the older one. The chief advantage possessed by the international classification is that it presents a very extensive field for comparison, the countries which have adopted it representing a population which is probably not less than 200,000,000. Commencing with 1910, the statistics of the United Kingdom have also been compiled in accordance with this system. Provision is made for a decennial revision of the classification, as it has been recognised that finality is impossible in the present state of medical science. The committee charged with the first revision met in Paris in July, 1909, and, in accordance with a resolution of the Australasian Medical Congress, held in Melbourne in October, 1908, a number of recommendations were made to it, dealing particularly with tropical diseases occurring in the northern parts of Australia. Most of these recommendations, together with many others, have been adopted. The number of categories is the same as in the 1900 nomenclature, but these have been subdivided into 189 causes instead of 179, the ten additional causes being obtained by shewing deaths from violence in greater detail than formerly.

The detailed classification groups causes of death under 179 (increased to 189 by the revised classification) different headings, in fourteen categories, as follows:—

- | | |
|---|---|
| i. General Diseases. | viii. Diseases of the Skin and Cellular Tissue. |
| ii. Diseases of the Nervous System and Organs of Special Sense. | ix. Diseases of the Organs of Locomotion. |
| iii. Diseases of the Circulatory System. | x. Malformations. |
| iv. Diseases of the Respiratory System. | xi. Infancy. |
| v. Diseases of the Digestive System. | xii. Old Age. |
| vi. Diseases of the Genito-urinary System and Adnexa. | xiii. Violence. |
| vii. Puerperal Condition. | xiv. Ill-defined Diseases. |

(iii.) *Compilation of Vital Statistics for 1907, 1908, 1909, 1910 and 1911 in Commonwealth Bureau.* The vital statistics of the Commonwealth for 1907, 1908, 1909, 1910 and 1911 have been tabulated according to this classification in the Commonwealth Bureau, and the system is being employed in the majority of the State offices in the preparation of their monthly and quarterly bulletins of vital statistics.

(iv.) *Classification of Causes of Death, 1907 to 1911, according to Abridged Bertillon Index.* An abridged classification, which enumerates thirty-five diseases and groups of diseases (increased to thirty-eight by the revised classification), is in use in many European and American States, while the Commonwealth Statistics for 1907, 1908, and 1909 have been compiled on the detailed classification of 179 headings and 1910 and 1911 for 189 headings. A table has been compiled shewing the causes of death according to the abridged classification, so that the results may be compared with those of countries which use the abridged index.

The compilations for 1907, 1908, 1909, 1910 and 1911 will be found in full in "Bulletins Nos. 8, 14, 20, 25, and 29 of Population and Vital Statistics"; here it will suffice to give the abridged classification under thirty-eight headings for the year 1911:—

CAUSES OF DEATH—COMMONWEALTH, 1911.

(a) MALES.

Cause.	N.S.W.	Vic.	Q'land.	S.Aust.	W.Aus.	Tas.	Nor. Ter.	F. C. Ter.	C'wlth.
1 Typhoid Fever ...	103	55	61	16	60	13	1	...	309
2 Typhus ...	...	...	...	...	...	...	...	...	...
3 Malaria ...	1	...	9	...	3	...	3	...	16
4 Small-pox ...	...	...	...	...	...	...	...	...	...
5 Measles ...	28	39	17	8	13	5	...	...	110
6 Scarlet Fever ...	6	1	7	...	...	...	...	...	14
7 Whooping Cough ...	77	19	22	8	5	2	...	...	133
8 Diphtheria and Croup ...	129	127	48	35	13	10	...	...	362
9 Influenza ...	84	70	38	5	20	11	...	...	228
10 Asiatic Cholera ...	...	...	...	...	...	...	...	...	...
11 Cholera Nostras ...	2	2	...	...	...	...	...	...	4
12 Other Epidemic Diseases ...	39	27	105	6	6	1	4	...	188
13 Tuberculosis of the Lungs ...	642	569	219	137	121	71	8	...	1,767
14 Tuberculosis of the Men- inges ...	42	45	14	18	8	7	...	...	134
15 Other forms of Tubercu- losis ...	51	55	16	14	9	9	...	...	154
16 Cancer and other Malignant Tumours ...	660	532	238	147	107	75	1	1	1,761
17 Simple Meningitis ...	128	114	48	38	26	20	...	...	374
18 Congestion, Hæmorrhage and Softening of Brain ...	393	374	151	105	63	35	...	1	1,122
19 Organic Diseases of the Heart ...	968	906	422	219	147	100	1	...	2,763
20 Acute Bronchitis ...	129	76	25	29	10	7	...	...	276
21 Chronic Bronchitis ...	216	218	64	51	14	14	...	...	577
22 Pneumonia ...	365	380	146	82	123	47	1	...	1,144
23 Other Diseases of the Res- piratory System (Tuber- culosis excepted) ...	369	463	164	57	73	44	1	...	1,171
24 Diseases of the Stomach (Cancer excepted) ...	63	56	31	9	8	7	...	...	174
25 Diarrhoea & Enteritis (child- ren under 2 years only) ...	542	374	196	77	149	50	...	...	1,388
26 Appendicitis and Typhlitis ...	65	57	22	15	11	9	...	...	179
27 Hernia, Intestinal Ob- structions ...	85	76	30	16	19	8	...	...	234
28 Cirrhosis of the Liver ...	87	76	45	14	17	4	...	...	243
29 Nephritis and Bright's Disease ...	433	402	172	93	64	31	2	...	1,197
30 Non-cancerous Tumours and other Diseases of Female Genital Organs ...	...	...	...	...	...	...	...	...	...
31 Puerperal Septicæmia (Puerperal Fever, Puer- peral Peritonitis, Puer- peral Phlebitis) ...	...	...	...	...	...	...	...	...	...
32 Other Puerperal Accidents of Pregnancy and Con- finement ...	...	...	...	...	...	...	...	...	...
33 Congenital Debility and Malformations ...	696	499	208	142	134	87	1	1	1,768
34 Senile Debility ...	806	781	203	205	88	134	7	1	2,225
35 Violence ...	848	503	486	190	221	63	11	1	2,323
36 Suicide ...	152	118	80	32	53	10	1	...	446
37 Other Diseases ...	1,654	1,278	745	368	305	148	10	...	4,508
38 Unspecified or Ill-defined Diseases ...	110	63	28	43	33	15	7	...	299
Total—Males ...	9,973	8,355	4,060	2,179	1,923	1,037	59	5	27,591

CAUSES OF DEATH—COMMONWEALTH, 1911.

(b) FEMALES.

Cause.	N.S.W.	Vic.	Q'land.	S. A.	W.A.	Tas.	N. T.	F.C. Ter.	C'wlth.
1 Typhoid Fever ...	76	39	28	7	22	7	...	...	179
2 Typhus ...	...	...	...	...	...	...	...	...	...
3 Malaria ...	1	...	1	...	1	...	...	...	3
4 Small-pox ...	1	...	...	...	...	...	...	...	1
5 Measles ...	22	33	19	8	7	7	...	...	96
6 Scarlet Fever ...	4	2	4	...	...	...	...	...	10
7 Whooping Cough...	78	21	29	16	7	7	...	...	158
8 Diphtheria and Croup	116	112	44	29	23	10	...	...	334
9 Influenza ...	79	76	33	11	11	7	...	2	219
10 Asiatic Cholera ...	...	...	...	...	...	...	...	...	...
11 Cholera Nostras ...	1	1	...	...	...	...	...	...	2
12 Other Epidemic Diseases ...	22	21	47	6	9	2	...	...	107
13 Tuberculosis of the Lungs...	459	527	135	155	64	56	...	1	1,397
14 Tuberculosis of the Meninges	29	56	8	14	14	14	...	...	135
15 Other forms of Tuberculosis	41	59	18	16	9	6	...	...	149
16 Cancer and other Malignant Tumours ...	562	562	156	154	70	56	...	...	1,560
17 Simple Meningitis ...	98	76	33	30	12	13	...	...	262
18 Congestion, Hæmorrhage, & Softening of the Brain ...	368	402	101	104	30	50	...	1	1,056
19 Organic Diseases of the Heart	698	801	247	211	77	98	1	...	2,133
20 Acute Bronchitis ...	94	77	30	20	6	12	...	...	239
21 Chronic Bronchitis ...	161	166	62	54	16	10	...	...	469
22 Pneumonia ...	234	261	85	56	45	44	...	...	725
23 Other Diseases of the Res- piratory System (Tuber- culosis excepted) ...	271	255	62	54	29	30	...	...	701
24 Diseases of the Stomach (Cancer excepted) ...	73	64	28	11	13	7	...	...	196
25 Diarrhœa and Enteritis (children under 2 yrs only)	403	290	161	72	100	48	...	...	1,074
26 Appendicitis and Typhlitis...	53	46	15	15	7	5	...	...	141
27 Hernia, Intestinal Obstruc- tions... ..	81	66	23	11	17	7	...	...	205
28 Cirrhosis of the Liver ...	45	60	22	9	4	2	...	...	142
29 Nephritis & Bright's Disease	257	294	108	50	25	20	...	...	754
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs	45	37	15	11	6	6	...	...	120
31 Puerperal Septicæmia (Puer- peral Fever, Puerperal Peritonitis, Puerperal Phlebitis) ...	90	53	30	21	9	5	1	...	209
32 Other Puerperal Accidents of Pregnancy & Confinement	157	97	68	43	21	20	...	...	406
33 Congenital Debility and Mal- formations ...	557	368	165	129	95	59	1	...	1,374
34 Senile Debility ...	549	626	102	214	40	93	...	...	1,624
35 Violence... ..	248	186	127	50	43	41	...	...	695
36 Suicide ...	40	35	14	2	5	2	...	...	98
37 Other Diseases ...	1,092	1,035	462	259	156	138	1	1	3,144
38 Unspecified or Ill-defined Diseases ...	68	57	2	17	7	8	2	...	161
Total—Females ...	7,173	6,861	2,484	1,859	1,000	890	6	5	20,278

CAUSES OF DEATH—COMMONWEALTH, 1911.

(c) TOTAL, MALES AND FEMALES.

Cause.	N.S.W.	Vic.	Qld.	S. A.	W.A.	Tas.	N. Ter.	Fed. Cap. Ter.	Commonwealth
1 Typhoid Fever ...	179	94	89	28	82	20	1	...	488
2 Typhus ...	...	...	...	...	...	...	...	...	...
3 Malaria ...	2	...	10	...	4	...	3	...	19
4 Small-pox ...	1	...	...	...	...	...	...	...	1
5 Measles ...	50	72	86	16	20	12	...	...	206
6 Scarlet Fever ...	10	3	11	...	...	...	...	...	34
7 Whooping Cough ...	155	40	51	24	12	9	...	...	291
8 Diphtheria and Croup ...	245	239	92	64	36	20	...	...	696
9 Influenza ...	163	146	71	16	31	18	...	2	447
10 Asiatic Cholera ...	...	...	...	...	...	...	...	...	...
11 Cholera Nostras ...	3	3	...	...	...	...	...	...	6
12 Other Epidemic Diseases ...	61	48	152	12	15	3	4	...	295
13 Tuberculosis of the Lungs ...	1,101	1,096	354	292	185	127	8	1	3,164
14 Tuberculosis of the Meninges ...	71	101	22	32	22	21	...	...	269
15 Other forms of Tuberculosis ...	92	114	34	30	18	15	...	...	303
16 Cancer and other Malignant Tumours ...	1,222	1,094	394	301	177	181	1	1	3,321
17 Simple Meningitis ...	226	190	81	68	38	33	...	...	636
18 Congestion, Hæmorrhage, & Softening of the Brain ...	761	776	252	209	93	85	...	2	2,178
19 Organic Diseases of Heart ...	1,666	1,707	669	430	224	198	2	...	4,896
20 Acute Bronchitis ...	223	153	55	49	16	19	...	...	515
21 Chronic Bronchitis ...	377	384	126	105	30	24	...	...	1,046
22 Pneumonia ...	599	641	231	138	168	91	1	...	1,869
23 Other Diseases of the Respiratory System (Phthisis excepted) ...	640	718	226	111	102	74	1	...	1,872
24 Diseases of the Stomach (Cancer excepted) ...	136	120	59	20	21	14	...	...	370
25 Diarrhoea and Enteritis (children under 2 yrs. only) ...	945	664	357	149	249	98	...	...	2,462
26 Appendicitis and Typhlitis ...	118	103	37	30	18	14	...	...	320
27 Hernia, Intestinal Obstructions ...	166	142	53	27	36	15	...	...	439
28 Cirrhosis of the Liver ...	132	136	67	23	21	6	...	...	385
29 Nephritis & Bright's Disease ...	690	696	280	143	89	51	2	...	1,951
30 Non-cancerous Tumours & other Diseases of the Female Genital Organs ...	45	37	15	11	6	6	...	...	120
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis) ...	90	53	30	21	9	5	1	...	209
32 Other Puerperal Accidents of Pregnancy and Confinement ...	157	97	68	43	21	20	...	...	406
33 Congenital Debility and Malformations ...	1,253	867	373	271	229	146	2	1	3,142
34 Senile Debility ...	1,355	1,407	305	419	128	227	7	1	3,849
35 Violence ...	1,096	689	613	240	264	104	11	1	3,018
36 Suicide ...	192	153	94	34	58	12	1	...	544
37 Other Diseases ...	2,746	2,313	1,207	627	461	286	11	1	7,652
38 Unspecified or Ill-defined Diseases ...	178	120	30	60	40	23	9	...	460
Total—Males and Females	17,146	15,216	6,544	4,038	2,923	1,927	65	10	47,869

(d) The classification for the years 1907, 1908, 1909, and 1910 is shewn for the Commonwealth in the following table, and for purposes of comparison the figures for

the year 1911 have been repeated from the preceding table. Male and female deaths for 1905, 1906, and 1907 are shewn separately on page 237 of the second issue, those for 1908 on pages 211 and 212 of the third issue, for 1909 on pages 200 and 201 of the fourth issue, and for 1910 on pages 202 and 203 of the fifth issue of this Year Book; while the figures for 1911 are given on the two preceding pages.

The figures for 1907, 1908, and 1909, which were compiled under thirty-five headings, have here been distributed among the corresponding headings of the revised classification.

CAUSES OF DEATH—COMMONWEALTH, 1907 to 1911.

MALES AND FEMALES.

Cause.	1907.	1908.	1909.	1910.	1911.
1 Typhoid Fever ...	564	736	661	648	488
2 Typhus ...	...	...	...	...	...
3 Malaria ...	42	52	59	55	19
4 Small-pox ...	...	...	1	4	1
5 Measles ...	147	125	31	124	206
6 Scarlet Fever ...	37	63	74	58	24
7 Whooping Cough ...	1,070	249	257	476	291
8 Diphtheria and Croup ...	403	421	435	555	696
9 Influenza ...	902	588	326	324	447
10 Asiatic Cholera ...	...	...	...	...	...
11 Cholera Nostras ...	5	4	1	1	6
12 Other Epidemic Diseases ...	276	268	221	184	295
13 Tuberculosis of the Lungs ...	3,206	3,409	3,169	3,059	3,164
14 Tuberculosis of the Meninges ...	237	205	220	215	269
15 Other forms of Tuberculosis ...	415	352	332	343	303
16 Cancer and other Malignant Tumours ...	2,940	2,921	3,112	3,205	3,321
17 Simple Meningitis ...	648	676	616	567	636
18 Congestion, Hæmorrhage, and Softening of the Brain ...	1,901	1,867	1,665	1,704	2,178
19 Organic Diseases of the Heart ...	3,801	4,066	3,940	4,378	4,896
20 Acute Bronchitis ...	514	412	422	420	515
21 Chronic Bronchitis ...	844	818	897	859	1,046
22 Pneumonia ...	1,788	1,871	1,752	1,612	1,869
23 Other Diseases of the Respiratory System (Tuberculosis excepted) ...	1,689	1,569	1,565	1,544	1,872
24 Diseases of the Stomach (Cancer excepted) ...	334	308	272	297	370
25 Diarrhoea and Enteritis (Children under two years only) ...	2,733	3,236	2,803	3,145	2,462
26 Appendicitis and Typhlitis ...	305	293	344	315	320
27 Hernia, Intestinal Obstructions ...	411	389	396	398	439
28 Cirrhosis of the Liver ...	325	362	331	368	385
29 Nephritis and Bright's Disease ...	1,760	1,864	1,799	1,771	1,951
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs ...	128	159	130	149	120
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis) ...	179	202	201	218	209
32 Other Puerperal Accidents of Pregnancy and Confinement ...	435	404	376	373	406
33 Congenital Debility and Malformations ...	3,038	2,973	2,905	3,221	3,142
34 Senile Debility ...	3,136	3,466	3,194	3,353	3,849
35 Violence ...	2,679	2,922	2,664	2,738	3,018
36 Suicide ...	461	497	495	516	544
37 Other Diseases ...	6,677	7,417	7,419	7,795	7,652
38 Unspecified or Ill-defined Diseases ...	1,275	1,262	1,087	598	460
Total	45,805	46,426	44,172	45,590	47,869

16. **Certification of Deaths.**—Information was obtained in 1911 as to the persons by whom the 47,869 deaths which occurred in the Commonwealth were certified. The result of the enquiry shews that approximately 88.2 per cent. (in 1910, 88.1 per cent.) were certified by medical practitioners, and 10.9 per cent. (in 1910, 11.1 per cent.) by coroners after inquests, or magisterial enquiries, while in 0.9 per cent. (in 1910, 0.8 per cent.) of the cases there was either no certificate given, or particulars were not forthcoming. The results are shewn in detail in Bulletin No. 29; a short summary will therefore suffice here:—

CERTIFICATION OF DEATHS, COMMONWEALTH, 1911.

Death Certified by—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	F.C. T.	C'wlth.
Medical practitioner	15,005	13,318	5,897	3,642	2,518	1,804	20	9	42,213
Coroner ...	2,090	1,893	816	383	365	114	41	1	5,203
Not certified or not stated ...	51	5	331	13	40	9	4	...	453
Total Deaths ...	17,146	15,216	6,544	4,038	2,923	1,927	65	10	47,869

Of the cases certified by coroners, violent deaths numbered 2475, ill-defined causes 255, organic heart disease 437, senile decay 476, congenital debility 188, diarrhœa and enteritis 97, Bright's disease 77, congestion and hæmorrhage of brain 141, tuberculosis of lungs 87, pneumonia 123, infantile convulsions 58, broncho-pneumonia 59, diseases of arteries, aneurisms, etc. 43, and acute and chronic alcoholism 27; a total of 4543 out of 5203.

Of uncertified causes of death, violent deaths numbered 206, senile debility 49, ill-defined causes 22, infantile convulsions 27, congenital debility 31, diarrhœa and enteritis 9, tuberculosis of the lungs 7, organic heart disease 8, and pneumonia 9; a total of 368 out of 453.

17. **Deaths from Special Causes.**—The table on p. 227 furnishes comparisons for the last five years only, and comparisons will, therefore, be restricted to that period.

(i.) *Typhoid Fever.* Deaths from typhoid fever were more numerous in 1908 than in 1907, numbering 736, against 564 in 1907. In 1909 the number fell to 661, to 648 in 1910, while only 488 deaths in 1911 were due to typhoid fever, of which 179 occurred in New South Wales, 94 in Victoria, 89 in Queensland, 23 in South Australia, 82 in Western Australia, and 20 in Tasmania, and 1 in the Northern Territory.

(ii.) *Typhus.* The death of one woman was registered in 1906 in Victoria as being due to typhus, but this registration may have been due to an error in the death certificate, and the death may possibly have been one of typhoid (enteric) fever.

(iii.) *Malaria.* Deaths from malarial diseases are practically confined to the tropical districts of Northern Queensland and Western Australia, and to the Northern Territory, 10 out of 19 deaths registered in 1911 having occurred in Queensland, and 3 in the Northern Territory.

(iv.) *Small-pox.* No deaths from small-pox occurred during the two years 1907 and 1908, but in 1909 one death was registered in Western Australia. In 1910 one death was registered in New South Wales, and three in Victoria. In 1911, only one death occurred in New South Wales.

(v.) *Measles.* No serious epidemic of measles has occurred for several years; the deaths in 1908 were less numerous than in 1907, numbering 125, against 147. In 1909 the deaths numbered 31, while 124 were registered in 1910, and 206 in 1911.

(vi.) *Scarlet Fever*. 24 deaths were registered in 1911, 10 of which occurred in New South Wales, and 11 in Queensland.

(vii.) *Whooping Cough*. A rather severe epidemic of whooping cough visited New South Wales in the early part of 1907, causing 592 deaths out of a total of 1070 registered in the Commonwealth. The deaths in 1908 fell to 249, with a slight increase to 257 in 1909, and a much greater increase to 476 in 1910. During 1911, however, only 291 deaths were registered.

(viii.) *Diphtheria and Croup*. Deaths in 1907, 403; in 1908, 421; in 1909, 435, in 1910, 555, and in 1911, 696, of which 245 occurred in New South Wales, 239 in Victoria, 92 in Queensland, and 64 in South Australia.

(ix.) *Influenza*. This disease was rather more prevalent in 1907 than in the two previous years, the deaths numbering 902, against 428 and 539. The deaths in 1908 were 588, in 1909, 326; 324 in 1910, and in 1911 447, of which 163 occurred in New South Wales, 146 in Victoria, and 71 in Queensland.

(x.) *Asiatic Cholera*. No cases of Asiatic cholera have ever occurred in the Commonwealth.

(xi.) *Cholera Nostras*. Isolated cases only of cholericiform diarrhoea occurred in each of the four years. Six deaths from this cause occurred during 1911.

(xii.) *Other Epidemic Diseases*. The number of deaths registered under this heading was 276 in 1907, 268 in 1908, 221 in 1909, 184 in 1910, and 295 in 1911. The list in 1911 includes the following diseases:—Dysentery 121, erysipelas 68, leprosy 8, of which 7 occurred in Queensland, other epidemic diseases, 98. Prior to 1910 beri beri was included in other epidemic diseases, but is now included in No. 37 of the revised classification. Of the 54 deaths from leprosy in the years 1907 to 1911, 40 occurred in Queensland. There were no deaths from plague in the Commonwealth during 1910 and 1911. In 1907, 48 deaths were registered; in 1908, 14 deaths; and in 1909, 13 deaths.

(xiii.) *Tuberculosis of the Lungs*. The deaths in 1911 numbered 3164, viz., 1767 males and 1396 females. The figures for 1907, 1908, 1909, and 1910 were 3206, 3409, 3169, and 3059 respectively. Of the deaths in 1911, 1101 occurred in New South Wales, 1097 in Victoria, 354 in Queensland, 292 in South Australia, 185 in Western Australia, 127 in Tasmania, 8 in Northern Territory, and 1 in the Federal Capital Territory. In accordance with the revised classification, deaths from tuberculosis of the larynx are now included with Tuberculosis of the lungs, instead of in class 15 as in years prior to 1910. In the table on page 227, deaths from Tuberculosis of the larynx have been included with tuberculosis of the lungs, so that the figures allow of correct comparison.

(xiiiia.) *Tuberculosis of the Respiratory System*. Of the various forms of tuberculosis prevalent in the Commonwealth, that which has probably attracted the most attention and has been the subject of the widest comment is phthisis, or tuberculosis of the lungs. The intimate relation, however, between tuberculosis of the lungs and that of other parts of the respiratory system renders it desirable that all forms of tuberculosis of the respiratory system should be brought under one head for various investigations concerning the age incidence and duration of this disease.

In the matter of the age incidence of death from tuberculosis of the respiratory system, diagrams were given in Year Books 2, 3, and 4, pp. 239, 217, and 206 respectively, shewing the frequency of deaths at successive ages in England and Wales during 1906 (Fig. 1), and in the Commonwealth during 1907 (Fig. 2). These were superseded by a fuller reference based on later results in Year Book No. 5, pp. 230, etc. The results given depended upon intercensal estimates of population, and these having now been adjusted to agree with the Census of 3rd April, 1911, some slight amendments of the figures in previous issues were made in Year Book No. 5.

The figures dealt with furnish the following death-rates from tuberculosis of the respiratory system for the years specified :—

Particulars.	Males.	Females.	Total.
ENGLAND AND WALES, 1906—			
Population	16,689,707	17,857,309	34,547,016*
Deaths from tuberculosis of the respiratory system	22,645	17,101	39,746
Death-rate per 100,000 of population	135.68	95.76	115.05
COMMONWEALTH OF AUSTRALIA, 1907—			
Population	2,141,727	1,982,002	4,123,729
Deaths from tuberculosis of the respiratory system	1,891	1,477	3,368
Death-rate per 100,000 of population	88.29	74.52	81.67

* Not corrected to Census.

(xiv.) *Tuberculosis of the Meninges.* The number of deaths registered in 1907 was 237; in 1908, 205; in 1909, 220; in 1910, 215; and in 1911, 269.

(xv.) *Other Forms of Tuberculosis.* Deaths numbered in 1907, 415; in 1908, 352; in 1909, 332; in 1910, 343; and in 1911, 303. The deaths in 1911 include the following forms of tuberculosis :—Abdominal tuberculosis, 133; Pott's disease, 47; white swellings, 10; tuberculosis of other organs, 47; and disseminated tuberculosis, 66. Tuberculosis of the larynx (see paragraph xiii.)

(xv.a) *All Forms of Tuberculosis.* A complete tabulation of all the different tubercular diseases from which deaths occurred in 1911, will be found in Bulletin No. 29 of Population and Vital Statistics. Here it will suffice to show a few of the features of the tabulation mentioned. The total number of deaths due to tubercular diseases was 3736, viz., 2055 males and 1681 females. The following table shews the ages of these 3736 persons :—

AGES OF PERSONS WHO DIED FROM TUBERCULAR DISEASES, 1911.

COMMONWEALTH.

Ages.	Male.	Female	Total.	Ages.	Male.	Female	Total.
Under 5 years ...	124	114	238	55 years and under 60	140	49	189
5 years and under 10	30	31	61	60	65	89	132
10 " " " " 15	44	42	86	65 " " " " 70	64	37	101
15 " " " " 20	70	148	218	70 " " " " 75	42	19	61
20 " " " " 25	168	260	428	75 " " " " 80	15	6	21
25 " " " " 30	219	255	474	80 " " " " 85	7	6	13
30 " " " " 35	220	206	426	Age not stated ...	3	...	3
35 " " " " 40	187	176	363				
40 " " " " 45	246	140	386				
45 " " " " 50	223	100	323	Total Deaths ...	2,055	1,681	3,736
50 " " " " 55	164	49	213				

A tabulation has been made of the occupations of males dying from tubercular diseases during 1911. A summary is here given :—

OCCUPATION OF MALES WHO DIED FROM TUBERCULAR DISEASES, 1911. **COMMONWEALTH.**

Occupation.	No. of Deaths	Occupation.	No. of Deaths
Professional class ...	112	Agricultural class ...	142
Domestic class ...	87	Pastoral class ...	35
Mercantile class ...	280	Working in mines and quarries ...	212
Engaged in transport and communication ...	160	Other primary producers ...	11
Manufacturing class ...	238	Independent means ...	31
Engaged in building and construction ...	94	Dependents ...	259
Indefinite industrial workers ...	363	Occupation not stated ...	31
		Total male deaths ...	2,055

The length of residence in the Commonwealth of persons who died from tubercular diseases has been tabulated for the year 1911 for all the Commonwealth States, with the following results:—

LENGTH OF RESIDENCE IN COMMONWEALTH **OF PERSONS WHO DIED FROM TUBERCULAR DISEASES, 1911.**

Length of Residence in Commonwealth.	Male.	Fem.	Total.	Length of Residence in Commonwealth.	Male.	Fem.	Total.
Born in Commonwealth ...	1,331	1,399	2,730	Resident 10 yrs. & under 15	25	13	38
Resident under 1 year ...	39	17	56	" 15 " 20	30	10	40
" 1 year ...	19	7	26	" 20 " over	436	169	605
" 2 years ...	20	5	25	Length of residence not stated	117	40	157
" 3 " 	6	3	9				
" 4 " 	9	4	13				
" 5 yrs. & under 10	23	14	37	... Total Deaths ...	2,055	1,681	3,736

There would not appear, therefore, to be much ground for the statement sometimes heard that many persons arrive in Australia in the last stages of consumption.

In order to shew the prevalence of tuberculosis in the several States, the death rates from tubercular diseases are shewn in the following table, together with the percentage which deaths from tuberculosis bear on the total number of deaths registered:—

DEATH RATES (a) FROM TUBERCULOSIS AND PERCENTAGE ON TOTAL DEATHS. **COMMONWEALTH, 1911.**

State.	Death Rates (a) from Tuberculosis.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.85	0.67	0.76	7.97	7.37	7.37
Victoria	1.01	0.97	0.99	8.01	9.36	8.62
Queensland	0.74	0.58	0.67	6.13	6.48	6.26
South Australia	0.81	0.91	0.86	7.75	9.95	8.77
Western Australia	0.84	0.71	0.78	7.18	8.70	7.70
Tasmania	0.90	0.82	0.86	8.39	8.54	8.46
North. Territory	2.93	...	2.41	13.56	...	12.31
Fd. Cap. Territory	...	1.31	0.56	...	20.00	10.00
Commonwealth	0.88	0.78	0.83	7.45	8.29	7.80

(a) Number of deaths from tuberculosis per 1000 of mean population.

It may be of interest to state that while deaths from all tubercular diseases in the Commonwealth were 0.83 per thousand in 1911, they were 1.02 per thousand in Ontario in 1910; 1.43 per thousand in England and Wales in 1910; 1.51 per thousand in Prussia in 1910; 2.88 per thousand in Austria in 1910; and 3.48 per thousand in Hungary in 1910. The Commonwealth occupies, therefore, a very enviable position in regard to tubercular diseases, when compared with European countries.

(xvi.) *Cancer and other Malignant Tumours.* Deaths from cancer shew a tendency to increase, the figures for 1907 being 2940 deaths; for 1908, 2921 deaths; for 1909, 3112 deaths; and 1910, 3205 deaths; and in 1911, 3321 deaths. Of the deaths registered in 1911, 1761 were those of males, viz., 660 in New South Wales, 532 in Victoria, 238 in Queensland, 147 in South Australia, 107 in Western Australia, and 75 in Tasmania; while 1560 were those of females; viz., 562 in New South Wales, 562 in Victoria, 156 in Queensland, 154 in South Australia, 70 in Western Australia, and 56 in Tasmania. Bulletin No. 29 contains a complete tabulation of the various types of cancer and of the seat of the disease, of which the following is a summary:—

DEATHS FROM CANCER, COMMONWEALTH, 1911.

Seat of Disease.					Male.	Female.	Total.
Cancer, etc., of the buccal cavity	...	...	...	...	250	20	270
" " the stomach and liver	...	...	...	...	760	472	1,232
" " the peritoneum, the intestines, and the rectum	...	...	...	...	188	192	380
" " the female genital organs	...	...	...	...	...	323	323
" " the breast	...	...	...	...	...	225	225
" " the skin	...	...	...	...	74	39	113
" " other organs	...	...	...	...	489	289	778
Total Deaths					1,761	1,560	3,321

Of these deaths 1009 were described as cancer, 1413 as carcinoma, 144 as epithelioma, 401 as "malignant disease," 53 as "malignant tumour," 5 as neoplasm, 51 as "rodent ulcer," 221 as sarcoma, and 24 as scirrhus.

The ages of the 3321 persons who died from cancer in 1911, are shewn in the following table, from which it will be seen that while the ages below 35 are not by any means immune from the disease, the great majority of deaths occurred at ages from 35 upwards, the maximum being found in the age group 65 to 70.

AGES OF PERSONS WHO DIED FROM CANCER, 1911.

COMMONWEALTH.

Ages.	Males.	Female	Total.	Ages.	Males.	Female	Total.
Under 15 years	21	8	29	65 years and under 70	306	194	500
15 years and under 20	10	6	16	70 " " 75	203	160	363
20 " " 25	10	7	17	75 " " 80	150	136	286
25 " " 30	12	17	29	80 " " 85	83	67	150
30 " " 35	25	35	60	85 years and over	44	39	83
35 " " 40	29	59	88	Age not stated	1	...	1
40 " " 45	81	100	181				
45 " " 50	192	173	365				
50 " " 55	208	203	411				
55 " " 60	203	179	382				
60 " " 65	243	177	420				
				Total Deaths	1,761	1,560	3,321

A tabulation has been made of the occupations of the males who died from cancer, of which the following is a summary:—

OCCUPATION OF MALES WHO DIED FROM CANCER, 1911.

COMMONWEALTH.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
Professional class	92	Pastoral class	73
Domestic class	62	Working in mines and quarries...	137
Mercantile class	179	Other primary producers	16
Engaged in transport and communication	121	Independent means	92
Manufacturing class	153	Dependents	49
Engaged in building and construction	109	Occupation not stated... ..	32
Indefinite industrial workers ...	360		
Agricultural class	286	Total Male Deaths	1,761

As the following tables shew, the death rates from cancer are below those for tubercular diseases in all the States (with the exception, however, of the female death rates in New South Wales), but while the latter have a general tendency to decrease, the former have, on the contrary, shewn an increase in nearly every recent year.

DEATH RATES (a) FROM CANCER AND PERCENTAGE ON TOTAL DEATHS, 1911.

COMMONWEALTH.

State.	Death Rates (a) from Cancer.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.77	0.71	0.74	6.62	7.83	7.13
Victoria ...	0.80	0.85	0.82	6.37	8.19	7.19
Queensland ...	0.71	0.56	0.64	5.86	6.28	6.02
South Australia...	0.70	0.76	0.73	6.75	8.28	7.45
Western Australia	0.65	0.57	0.62	5.57	7.00	6.05
Tasmania ...	0.77	0.60	0.69	7.23	6.29	6.80
Northern Territory	0.37	...	0.30	1.70	...	1.54
Fed. Capital Territory	0.99	...	0.56	20.00	...	10.00
Commonwealth	0.75	0.72	0.74	6.38	7.69	6.93

a Number of deaths from Cancer per 1000 of mean population.

The following table shows the death rate of the Commonwealth in comparison with other countries:—

CANCER—DEATH RATE IN VARIOUS COUNTRIES.

Country.	Year.	Rate.	Country.	Year.	Rate.
Western Australia ...	1911	0.62	Belgium	1909	0.54
Queensland ...	1911	0.64	Ireland	1910	0.68
Tasmania ...	1911	0.69	Austria	1910	0.73
South Australia ...	1911	0.73	Prussia	1910	0.77
New South Wales ...	1911	0.74	New Zealand	1910	0.84
Commonwealth ...	1911	0.74	Netherlands	1910	0.93
Victoria ...	1911	0.82	Scotland	1909	1.00
Hungary ...	1910	0.45	Switzerland	1909	1.07
Spain ...	1910	0.45	England and Wales ...	1910	1.97
Italy ...	1909	0.53			

The fifth issue of this Year Book contains, on pages 230, etc., a paper dealing, *inter alia*, with the incidence of cancer in the Commonwealth. The paper is not reprinted in the present issue.

(xvii.) *Simple Meningitis.* The table shews 648 deaths in 1907, 676 deaths in 1908, 616 deaths in 1909, 567 in 1910, and 636 in 1911.

(xviii.) *Congestion, Hæmorrhage, and Softening of the Brain.* The deaths registered under this heading in 1907 were 1901, viz., 1038 males and 863 females; in 1908, 1867, viz., 991 males and 876 females; in 1909, 1665, viz., 869 males and 796 females; in 1910, 1704, viz., 864 males and 840 females; and in 1911, 2178, viz., 1122 males and 1056 females. The 1911 figures are made up of congestion and hæmorrhage of the brain—1048 males, 987 females, total 2035; and softening of the brain—74 males, 69 females, total 143.

(xix.) *Organic Diseases of the Heart.* The number of deaths registered in 1911 was 4896, viz., 2763 males and 2133 females. Of these deaths, New South Wales was responsible for 968 males and 698 females; Victoria for 906 males and 801 females; Queensland for 422 males and 247 females; South Australia for 219 males and 211 females; Western Australia for 147 males and 77 females; Tasmania for 100 males and 98 females; and Northern Territory 1 male and 1 female. To the figures for 1911 correspond the following death rates and percentages to total deaths:—

DEATH RATES (a) FROM ORGANIC HEART DISEASE AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1911.

State.	Death Rates (a) from Organic Heart Disease.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	1.13	0.88	1.01	9.71	9.73	9.72
Victoria	1.36	1.20	1.28	10.84	11.67	11.22
Queensland	1.26	0.88	1.09	10.39	9.94	10.22
South Australia	1.05	1.04	1.04	10.05	11.35	10.65
Western Australia	0.90	0.63	0.78	7.64	7.70	7.66
Tasmania	1.03	1.05	1.04	9.64	11.01	10.27
Northern Territory	0.37	1.71	0.60	1.70	16.67	3.08
Federal Capital Territory	..	..	..	..	..	..
Commonwealth	1.18	0.99	1.09	10.01	10.52	10.23

a Number of deaths from Organic Heart Disease per 1000 of mean population.

(xx.) *Acute Bronchitis.* The classification of causes of deaths requires deaths of persons under five years of age, which are merely ascribed to "bronchitis," to be classified under "acute bronchitis," and similarly certified deaths of older persons under "chronic bronchitis." This rule has been followed throughout in compiling the tables for 1907, 1908, 1909, 1910, and 1911, with the result that acute bronchitis is credited with 514 deaths in 1907, 412 deaths in 1908, 422 deaths in 1909, and 420 in 1910, and 515 in 1911, viz., 276 males and 239 females.

(xxi.) *Chronic Bronchitis.* The adjustment mentioned in the preceding paragraph gives a total of 844 deaths in 1907, 818 deaths in 1908, 897 deaths in 1909, 859 in 1910, and 1046 in 1911, viz., 577 males and 469 females.

(xxii.) *Pneumonia*. The 1911 figures were 1144 males and 725 females, a total of 1869 deaths.

(xxiii.) *Other Diseases of the Respiratory System*. This head was established in 1910, the figures previously being included in "Other Diseases" (paragraph xxxvii.). Deaths in 1907 numbered 1689; in 1908, 1569; in 1909, 1565, in 1910, 1544, and in 1911, 1872. The total for 1911 is made up as follows, viz.:—Diseases of the nasal fossæ, 11 deaths; diseases of the larynx, 61 deaths; diseases of the thyroid body, 19 deaths; broncho-pneumonia, 958 deaths, pleurisy, 187 deaths; pulmonary congestion and apoplexy, 173 deaths; gangrene of the lung, 44 deaths; asthma, 162 deaths; pulmonary emphysema, 11 deaths; fibroid phthisis, miners' complaint, 163 deaths; other diseases of the respiratory system (tuberculosis excepted), 83 deaths.

(xxiv.) *Diseases of the Stomach (Cancer excepted)*. In 1911 this heading includes: Ulcer of the stomach, 58 males, 62 females; and other diseases of the stomach (cancer excepted), 116 males, 134 females; a total of 370 deaths. The corresponding figures for 1907, 1908, 1909, and 1910, were 334, 308, 272, and 297 respectively.

(xxv.) *Diarrhœa and Enteritis (Children under two years only)*. In 1907, deaths numbered 2733, viz., 1513 boys and 1220 girls; in 1908, 3236, viz., 1814 boys and 1422 girls; in 1909, 2803, viz., 1544 boys and 1259 girls; in 1910, 3145, viz., 1713 boys and 1432 girls; and in 1911, 2462, viz., 1388 boys and 1074 girls. The 1911 deaths were distributed amongst the six States as follows:—New South Wales, 542 males, 403 females, total 945; Victoria, 374 males, 290 females, total 664; Queensland, 196 males, 161 females, total 357; South Australia, 77 males, 72 females, total 149; Western Australia, 149 males, 100 females, total 249; and Tasmania, 50 males, 48 females, total 98.

The following are the death rates and percentages on total deaths due to infantile diarrhœa and enteritis in the States and Territories for the year 1911:—

DEATH RATES (a) FROM INFANTILE DIARRHŒA AND ENTERITIS, AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1911.

State.	Death Rate (a) from Infantile Diarrhœa and Enteritis.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.63	0.51	0.57	5.43	5.62	5.51
Victoria	0.56	0.44	0.50	4.48	4.23	4.36
Queensland	0.59	0.58	0.58	4.83	6.48	5.46
South Australia	0.37	0.36	0.36	3.53	3.87	3.69
Western Australia	0.91	0.81	0.87	7.75	10.00	8.52
Tasmania	0.51	0.53	0.51	4.82	5.39	5.09
Northern Territory	...	...	...	...	...	...
Fed. Cap. Territory	...	...	...	...	...	...
Commonwealth	0.59	0.50	0.55	5.03	5.30	5.14

a Number of deaths from these diseases per 1000 of mean population.

As a large number of these deaths is directly due to improper feeding, it would be interesting to know the percentage of infants who were bottle-fed, but, unfortunately, no provision exists for the registration of this information. The number of deaths was larger than usual in 1908, particularly in Victoria, and to a lesser degree in South Australia and in Tasmania, owing to the phenomenal heat experienced in the early part of that year. The death rates for the three States named were 0.83, 0.61, and 0.71 per 1000 respectively in 1908, compared with 0.55, 0.45 and 0.48 in 1907, and with 0.50, 0.36 and 0.51 in 1911.

(xxvi.) *Appendicitis and Typhlitis*. Prior to 1910 deaths from these causes were included in Other Diseases, paragraph xxxvii. Deaths numbered 305 in 1907, 293 in 1908, 344 in 1909, 315 in 1910, and in 1911, 320, viz., 179 males and 141 females.

(xxvii.) *Hernia, Intestinal Obstructions*. The number of deaths has not varied much from year to year, the number registered in 1907 being 411; in 1908, 389; in 1909, 396; in 1910, 398, and in 1911, 439, viz., 234 males and 205 females.

(xxviii.) *Cirrhosis of the Liver*. The deaths in 1907 numbered 325; in 1908, 362; in 1909, 331; in 1910, 368, and in 1911, 385, viz., 243 males and 142 females.

(xxix.) *Nephritis and Bright's Disease*. The number of deaths attributable to these diseases from year to year is a very large one. In 1907 there were registered the deaths of 1065 males and 695 females; in 1908, those of 1140 males and 724 females; in 1909, those of 1076 males and 723 females; in 1910, 1771, 1077 males and 694 females, and in 1911, 1951, 1197 males and 754 females. Of the deaths registered in 1911, those of 92 males and 59 females were ascribed to acute nephritis, and those of 1105 males and 695 females to Bright's disease. New South Wales was responsible for 690 deaths; Victoria for 696; Queensland for 250; South Australia for 143; Western Australia for 89; Tasmania for 51, and Northern Territory for 2; making a total of 1951.

(xxx.) *Non-cancerous Tumours and other Diseases of the Female Genital Organs*. Deaths in 1907 numbered 128; in 1908, 159; in 1909, 130; in 1910, 149; and in 1911, 120. Included in the 129 deaths registered in 1911 were the following:—Non-puerperal uterine hæmorrhage, 6; non-cancerous uterine tumours, 32; other diseases of the uterus, 19; cysts and other ovarian tumours, 36; other diseases of the female genital organs, 27.

(xxxi.) *Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)*. Deaths in 1907 were 179; in 1908, 202; in 1909, 201; in 1910, 218; and in 1911, 209.

(xxxii.) *Other Puerperal Accidents of Pregnancy and Confinement*. The deaths in 1907 numbered 435; in 1908, 404; in 1909, 376; in 1910, 373; and in 1911, 406. Included in the 406 deaths registered in 1911 were the following:—Accidents of pregnancy, 117; puerperal hæmorrhage, 71; other accidents of childbirth, 40; puerperal albuminuria and convulsions, 116; puerperal phlegmasia alba dolens, embolus, sudden death, 34; death following childbirth, 28.

(xxxii.a) *All Puerperal Diseases*. The 615 deaths registered in 1911 under the two preceding headings will be found tabulated in "Bulletin No. 29; Commonwealth Demography" under various aspects. It will suffice to repeat here the following facts:—

Of the 615 mothers who died in childbirth during the year 1911, 550 were married and 65 were single. As the total number of nuptial confinements was 113,939, and of ex-nuptial confinements 7018, it follows that one in 207 of married mothers, and one in 108 of single mothers, died of puerperal disease, the general proportion being one in 197, as against one in 196 in 1910, one in 195 in 1909, one in 181 in 1908, and one in 178 in 1907.

The ages of the mothers who died varied from 17 to 49 years, and are shewn in the following table:—

AGES OF MOTHERS WHO DIED IN CHILDBIRTH, COMMONWEALTH, 1911.

Age at Death.	Married Women.	Single Women.	Total.	Age at Death.	Married Women.	Single Women.	Total.
17 years ...	4	5	9	34 years ...	27	...	27
18 " ...	4	7	11	35 " ...	28	2	30
19 " ...	7	7	14	36 " ...	29	1	30
20 " ...	18	3	21	37 " ...	24	...	24
21 " ...	16	5	21	38 " ...	26	...	26
22 " ...	16	4	20	39 " ...	16	...	16
23 " ...	24	3	27	40 " ...	15	...	15
24 " ...	18	4	22	41 " ...	11	...	11
25 " ...	21	6	27	42 " ...	15	...	15
26 " ...	27	3	30	43 " ...	8	1	9
27 " ...	28	4	32	44 " ...	2	...	2
28 " ...	29	5	34	45 " ...	4	...	4
29 " ...	22	...	22	46 " ...	1	...	1
30 " ...	30	1	31	49 " ...	1	...	1
31 " ...	24	3	27				
32 " ...	32	1	33				
33 " ...	23	...	23	Total deaths	550	65	615

Of the 550 married women shewn in the above table, 23 died in Tasmania; in regard to these no information is available as to previous issue and as to duration of marriage. Of the remaining 527 women, 167 died at their first confinement, 72 at their second, 61 at their third, 66 at their fourth, 50 at their fifth, 36 at their sixth, 23 at their seventh, 18 at their eighth, 15 at their ninth, 9 at their tenth, 7 at their eleventh, 1 at her twelfth, and 2 at their fourteenth. The total number of children of the 527 mothers was 1690.

Thirty-five of the mothers who died had been married less than one year, 63 between one and two years, 49 between two and three years, the duration of marriage ranging up to 27 years. This tabulation will be found in detail, and distinguishing the ages at marriage, in "Bulletin No. 29; Commonwealth Demography," as will a further tabulation shewing the duration of marriage and previous issue in combination. These tables shew, for instance, that one mother, who had been married at the age of 18 years, died at the age of 43, in the 25th year of her marriage, at her fourteenth confinement.

(xxxiii.) *Congenital Debility and Malformations.* The figures for 1911 include children under one year of age, of whom 2751 were under three months. The 1911 figures include:—Malformations, 227 males, 177 females, total 404; and congenital debility, icterus, and sclerema of children under one year of age, 1541 males and 1197 females, total 2738; or a grand total of 3142. Of these deaths, 1253 were registered in New South Wales, viz., 696 males and 557 females; 867 in Victoria, viz., 499 males and 368 females; 373 in Queensland, viz., 208 males and 165 females; 271 in South Australia, viz., 142 males and 129 females; 209 in Western Australia, viz., 134 males and 95 females; 146 in Tasmania, viz., 87 males and 59 females; 1 male and 1 female in the Northern Territory, and 1 male in the Federal Capital Territory.

(xxxiv.) *Senile Debility.* The deaths ascribed to "old age" form a large group, and are slightly in excess of those due to infantile debility. In 1907 they numbered 3136, viz., 1721 males and 1415 females; in 1908, 3466, viz., 2027 males and 1439 females; in 1909, 3194, viz., 1829 males and 1365 females; in 1910, 3353, viz., 1905 males and 1448 females; and in 1911, 3849, viz., 2225 males and 1624 females. Of the deaths registered in 1911 1355 occurred in New South Wales, viz., 806 males and 549 females; 1407 in Victoria, viz., 781 males and 626 females; 305 in Queensland, viz., 203 males and 102 females; 419 in South Australia, viz., 205 males and 214 females; 128 in Western Australia, viz., 88 males and 40 females; 227 in Tasmania, viz., 134 males and 93 females; and 7 males in the Northern Territory and 1 male in the Federal Capital Territory.

Of the males whose death was described as due to senility, 1 was aged between 50 and 54; 9 were between 55 and 59; 55 between 60 and 64; 155 between 65 and 69; 380 between 70 and 74; 565 between 75 and 79; 559 between 80 and 84; 330 between 85 and 89; 140 between 90 and 94; 20 between 95 and 99; while 10 were 100 years old and upwards; and of one the age was not stated.

Of the females, 2 were between 55 and 59; 25 between 60 and 64; 105 between 65 and 69; 238 between 70 and 74; 395 between 75 and 79; 410 between 80 and 84; 281 between 85 and 89; 129 between 90 and 94; 33 between 95 and 99; while 11 were 100 years old and upwards.

(xxxv.) *Violence.* A very large number of deaths is every year due to external violence, and, as might be expected from the fact that their occupations expose them much more to accidents, males largely predominate. The figures quoted are exclusive of suicides, which have been treated as a separate group. Deaths ascribed to violence numbered in 1907, 2679, viz.: 2038 males and 641 females; in 1908, 2922, viz., 2187 males and 735 females; in 1909, 2664, viz., 2050 males and 614 females; in 1910, 2738, viz., 2128 males and 610 females; and in 1911, 3018, viz., 2323 males and 695 females. Of the deaths registered in 1911, those of 848 males and 248 females occurred in New South Wales; those of 506 males and 186 females in Victoria; those of 486 males and 127 females in Queensland; those of 190 males and 50 females in South Australia; those of 221 males and 43 females in Western Australia; those of 63 males and 41 females in Tasmania; and those of 11 males and 1 male in the Northern Territory and Federal Capital Territory respectively.

The following table shews the various kinds of accidental deaths which occurred in 1911, distinguishing males and females:—

DEATHS FROM VIOLENCE, COMMONWEALTH, 1911.

Cause of Death.	Males.	Females.	Total.
Poisoning by food	19	13	32
Venomous bites and stings	14	7	21
Other acute poisonings	44	21	65
Conflagration	9	7	16
Burns (conflagration excepted)	111	203	314
Absorption of deleterious gases	19	16	35
Accidental drowning	605	106	711
Traumatism by firearms	85	6	91
Traumatism by cutting or piercing instruments	5	...	5
Traumatism by fall	294	53	347
Traumatism in mines or quarries	119	...	119
Traumatism by machines	13	...	13
Traumatism by other crushing (vehicles, rail-ways, etc.)	377	42	419
Injuries by animals	57	8	65
Starvation, thirst, fatigue	107	56	163
Excessive cold	5	...	5
Effects of heat	50	28	78
Lightning	11	...	11
Electricity (lightning excepted)	5	...	5
Homicide by firearms	7	9	16
Homicide by cutting or piercing instruments...	6	5	11
Homicide by other means	29	16	45
Fractures (cause not specified)	122	50	172
Other external violence	210	49	259
Total Deaths	2,323	695	3,018

In every kind of violent death there was, therefore, an excess of males, with the exception of burning accidents, in which female deaths largely predominated, and homicide by firearms.

The excessive heat of January, 1908, was responsible for an increase in the number of deaths caused by insolation, i.e., sunstroke and heat apoplexy, from 64 in 1907 to 246 in 1908, distributed as follows:—New South Wales, 46; Victoria, 130; Queensland, 14; South Australia, 39; Western Australia, 15; Tasmania, 2. In 1911, as the preceding table shews, the deaths fell to 78.

(xxxvi.) *Suicide.* Although their number in 1908, 1909, 1910, and 1911 was greater than it was in 1907, it may be said that suicides have shewn a tendency to decrease during recent years, the number in 1905 having been 520, viz., 431 males and 89 females; while in 1906 it was 499, viz., 403 males and 96 females; in 1907, 461, viz., 385 males and 76 females; in 1908, 497, viz., 413 males and 84 females; in 1909, 495, viz., 398 males and 97 females; in 1910, 516, viz., 432 males and 84 females; and in 1911, 544, viz., 446 males and 98 females. Of the last named, those of 152 males and 40 females happened in New South Wales; those of 118 males and 35 females in Victoria; those of 80 males and 14 females in Queensland; those of 32 males and 2 females in South Australia; those of 53 males and 5 females in Western Australia; and those of 10 males and 2 females in Tasmania, and of 1 male in Northern Territory.

The modes adopted by persons who committed suicide in the years 1907 to 1911 were as follows:—

NUMBER OF MALE AND FEMALE SUICIDES, COMMONWEALTH, 1907 to 1911.

	Males.					Females.					Total.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
Pop'n at'n in millions	2.14	2.18	2.22	2.27	2.33	1.98	2.02	2.06	2.10	2.16	4.12	4.19	4.27	4.37	4.49
Mode of Death.															
Poisoning ...	57	88	70	79	93	32	35	54	34	52	89	123	124	113	145
Asphyxia ...	2	1	2	...	2	...	...	...	...	1	2	1	2	...	3
Hanging or Strangulation ...	71	68	67	72	69	12	15	9	10	10	83	83	76	82	79
Drowning ...	37	31	24	42	43	19	14	19	19	13	56	45	43	61	56
Firearms ...	129	146	138	134	133	3	7	6	6	9	132	153	144	140	142
Cutting instruments	61	54	74	79	65	5	6	5	13	9	66	60	79	92	74
Precipitation from a height ...	6	4	7	3	2	1	2	...	...	2	7	6	7	3	4
Crushing ...	3	6	5	8	6	2	2	1	...	...	5	8	6	8	6
Other modes	19	15	11	15	33	2	3	3	3	2	21	18	14	17	35
Total	385	413	398	432	446	76	84	97	84	98	461	497	495	516	544

The death rates from suicides and the percentage on total deaths borne by suicides are shewn in the following table:—

DEATH RATES (a) FROM SUICIDE AND PERCENTAGE ON TOTAL DEATHS, 1911. COMMONWEALTH.

State.	Death Rates (a) from Suicide.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.18	0.05	0.12	1.52	0.56	1.12
Victoria	0.18	0.05	0.12	1.41	0.51	1.01
Queensland	0.24	0.05	0.15	1.97	0.56	1.44
South Australia	0.15	0.01	0.08	1.47	0.11	0.84
Western Australia	0.32	0.04	0.20	2.78	0.50	1.98
Tasmania	0.10	0.02	0.06	0.96	0.23	0.62
Northern Territory	0.37	...	0.30	1.70	...	1.54
Federal Capital Territory	...	...	...	...	...	...
Commonwealth	0.19	0.05	0.12	1.62	0.48	1.14

a Number of deaths from suicide per 1000 of mean population.

From the following table, which shews the ages of the persons who committed suicide in 1911, it will be seen that both extreme youth and extreme old age are represented:—

AGES OF PERSONS WHO COMMITTED SUICIDE, COMMONWEALTH, 1911.

Ages.	M.	F.	Total.	Ages.	M.	F.	Total.
10 years and under 15	1	...	1	60 years and under 65	29	1	30
15 " " 20	7	6	13	65 " " 70	16	2	18
20 " " 25	30	9	39	70 " " 75	7	2	9
25 " " 30	42	11	53	75 " " 80	8	1	9
30 " " 35	46	19	65	80 " " 85	5	...	5
35 " " 40	53	14	67	85 " " 90	1	...	1
40 " " 45	55	11	66	Age not stated	...	1	1
45 " " 50	56	11	67				
50 " " 55	52	5	57				
55 " " 60	38	5	43	Total Deaths	446	98	544

The following table shews the occupations of the 446 males who committed suicide:—

OCCUPATIONS OF MALE PERSONS WHO COMMITTED SUICIDE, 1911.

COMMONWEALTH.

Occupations.	Deaths.	Occupations.	Deaths.
Professional class ...	34	Pastoral class ...	30
Domestic class ...	16	Working in mines and quarries ...	25
Mercantile class ...	63	Other primary producers ...	3
Engaged in transport and communication ...	34	Independent means ...	9
Manufacturing class ...	46	Dependents ...	4
Engaged in building and construction ...	23	Occupation not stated ...	14
Indefinite industrial workers ...	103		
Agricultural class ...	42	Total Deaths ...	446

The assertion has been made that suicide has become more frequent during recent years, but an examination of the figures from the year 1871 onwards hardly bears this out. The absolute figures have certainly increased, but proportionately to the population the figures for 1906-10 are practically the same as those for 1886-90. No particulars are available for Western Australia prior to 1886, and from 1886 to 1895 the sexes are not distinguished. All figures for the first five periods are, therefore, exclusive of Western Australia:—

SUICIDES, COMMONWEALTH, 1871-75 to 1906-10.

Period.	Number of Suicides.			Suicides per One Million.			Suicides of Females to 100 Suicides of Males. Based on	
	Males.	Females.	Total.	Males.	Females.	Total.	Absolute Figures.	Rates.
1871-75	715	150	865	150.94	37.56	99.07	20.98	24.88
1876-80	878	145	1,023	159.69	31.06	100.62	16.51	19.45
1881-85	999	183	1,182	152.58	32.90	97.61	18.32	21.56
1886-90	1,394	292	1,686	179.20	43.97	116.92	20.95	24.54
1891-95	1,574	337	1,911	181.34	44.09	117.07	21.41	24.31
1896-1900	1,838	410	2,248	191.11	47.88	123.65	22.31	25.05
1901-05	2,054	380	2,434	201.78	40.88	124.98	18.50	20.26
1906-10	2,031	437	2,468	186.11	43.22	117.39	21.51	23.22

a. 1705 inclusive of Western Australian figures. b. 1984 inclusive of Western Australian figures. c. 116.49 inclusive of Western Australian figures. d. 119.11 inclusive of Western Australian figures.

The course of suicide in Australia presents certain features which call for special comment, viz. :—(i.) the constancy of the measure of the suicidal tendency ; (ii.) its constancy in respect of the relative numbers of each sex ; and (iii.) its periodicity according to seasons or months.

In the fifth issue of this Year Book (pp. 240, etc.), the result of a series of investigations into periodicity of suicide was published. The paper is not reprinted in this issue, with the exception of the following paragraph dealing with the seasonal fluctuation of suicide.

There is a well marked seasonal fluctuation of suicide. This fluctuation is perhaps best shewn by computing for a period of years how many persons commit suicide per month, correcting the crude results so as to equalise the months in respect of their duration and total population. The results are :—

MONTHLY FREQUENCY OF SUICIDE, AUSTRALIA.

Month.	Numbers per 100,000,000 of Population.				Numbers per 10,000 Suicides.			
	N.S.W. & Queensl'd 1890-1899.	All States of Australia, 1900-1910.*		Persons.	N.S.W. & Queensl'd, 1890-1899.	All States of Australia, 1900-1910.		Persons.
	Persons.	Males.	Females.		Persons.	Males.	Females.	
January ...	1,163	1,797	357	1,108	859	935	842	920
February ...	1,053	1,636	421	1,057	777	853	994	878
March ...	1,019	1,661	366	1,041	752	866	864	865
April ...	956	1,540	413	1,002	706	803	975	832
May ...	1,072	1,520	352	962	792	792	831	799
June ...	1,002	1,398	265	857	740	729	625	712
July ...	954	1,476	321	922	704	769	758	766
August ...	1,221	1,548	380	990	902	807	897	822
September ...	1,080	1,502	318	936	798	783	751	778
October ...	1,284	1,698	393	1,074	948	885	928	892
November ...	1,227	1,622	307	992	906	845	725	824
December ...	1,512	1,790	343	1,098	1,116	933	810	912
	13,543	19,188	4,236	12,039	10,000	10,000	10,000	10,000

* For result for 1890 to 1910 see table hereinafter.

There is a distinct seasonal fluctuation ; it is, however, apparently not identical from decade to decade, and from the last three columns it is evident that the curve is by no means identical for the sexes. For the purpose of comparison the result for a long series of observations in various European countries, and the corresponding results for Australia for 1890 to 1910, are given. These shew in a general way that the seasonal relationship of the maximum frequency is identical in Australia with that of the Northern Hemisphere, the absolute difference between approximately 6 months.

The Australian figures for the last 21 years are based on two States for the first ten years and on all for the last eleven years. The following table shews the number of suicides occurring in each equalised month in 10,000 suicides :—

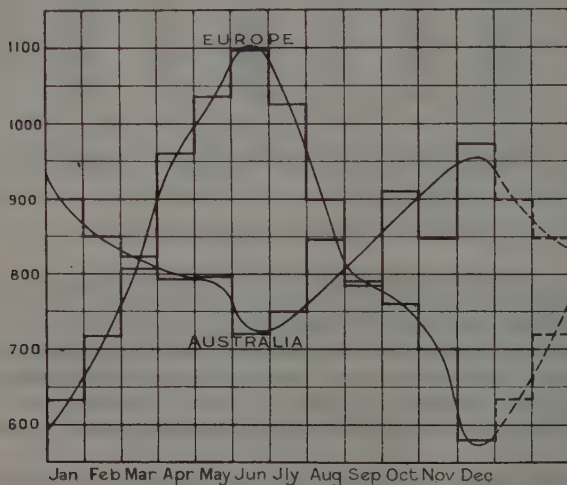
NUMBER OF SUICIDES OCCURRING IN EACH EQUALISED MONTH IN 10,000 SUICIDES.

Month.	France. (a)	Prussia.	Saxony.	Württemberg.		Baden.	Switzerland.	Italy.	Denmark.	Simple Mean	Australia. (b)	
	1827 to 1876	1885 to 1900	1875 to 1889	1846 to 1879	1889 to 1893	1881 to 1900	1884 to 1893	1864 to 1876	1896 to 1905		Month.	1890 to 1910
January ...	690	625	629	547	658	676	637	610	618	632	July	749
February...	719	688	696	805	742	664	744	771	629	718	August	846
March ...	851	803	817	848	800	864	749	827	713	808	Sept. ...	784
April ...	955	982	987	896	983	903	973	995	964	960	Oct. ...	910
May ...	1,018	1,018	1,040	998	1,009	972	1,025	1,121	1,135	1,037	Nov. ...	848
June ...	1,092	1,053	1,088	1,134	950	1,059	1,078	1,216	1,207	1,097	Dec. ...	973
July ...	1,053	997	1,010	1,063	983	991	1,039	1,023	1,072	1,026	Jan. ...	900
August ...	871	907	927	961	892	896	871	868	893	898	Feb. ...	849
September	757	836	813	769	833	805	832	714	740	789	March...	832
October ...	744	787	758	742	775	803	810	841	762	758	April ...	793
November	643	692	664	717	887	730	659	610	688	697	May ...	796
December	607	612	571	520	508	637	583	604	579	580	June ...	720
	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000		10,000

a Computed approximately from results given in Prof. v. Mayr's work *Statistik und Gesellschaftslehre*, Vol. III., p. 262.

b New South Wales and Queensland only for 1890 to 1899, and all States of Australia from 1900 to 1910 inclusive.

ANNUAL FLUCTUATIONS IN THE FREQUENCY OF SUICIDE.



EXPLANATION OF GRAPHS.—The horizontal divisions denote not calendar but equalised months and the vertical divisions denote 50 suicides per month out of an assumed total of 10,000 per annum (833½ per month). The rectangular lines denote the group results for the equalised months on the basis assumed. The upper curve denotes the probable instantaneous values for the whole of Europe, the lower the probable instantaneous values for the whole of Australia. The results are so corrected as to correspond to a population constant throughout the year.

In the diagram the rectangular lines shew the rates for the various months for Australia and Europe generally, and the curves give the most probable form of the fluctuation.

If the monthly mean temperatures of the capital cities of Australia be weighted in proportion to the populations, the resultant mean is as follows:—

Month	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Temp. Fahr....	71.1	70.7	68.4	68.5	57.7	53.6	51.8	54.1	57.7	61.8	65.6	69.0

These results may be regarded as approximately representing the temperature conditions influencing the rate of suicides owing to the fact that the populations of the cities have a preponderating influence. The frequency of suicide can be expressed by a formula depending on this average temperature.*

The remarkable correlation between temperature and suicide frequency is best seen by combining the results for pairs of months. In this way we obtain the two upper lines in the following table†:—

	Dec. Jan.	Feb. Mar.	April. May.	June. July.	Aug. Sept.	Oct. Nov.
Temperature, Fahr. ...	70.0	69.5	60.6	52.7	55.9	63.7
Suicides per 10,000 ...	1,832	1,743	1,631	1,478	1,600	1,716
Calculated ...	1,805	1,796	1,645	1,511	1,565	1,698

* See Journal Royal Society N.S.W., volume xiv., p. 109. The frequency (q) of suicide per million per diem in Australia can be put in the form

$$q = 0.33 + 0.003 t$$

where t is the temperature above 62° Fahr.

† This correlation is very approximately expressed by $615 + 17t$ (where t is the temperature Fahrenheit), a formula which gives results in the last line.

It may be pointed out that Australia differs very remarkably from Europe in this respect, viz., that the range of temperature throughout the year is decidedly smaller in Australia. Thus a mean for the various countries of Europe gives the range between the averaged hottest and coldest months of the year about 33° Fahr., while for Australia the range is only about 19°, i.e., but little more than half. We thus have:—

Ranges	In Temperature.	In Frequency.
In Europe ...	33° Fahr.	517
In Australia ...	19°	253

That is to say, the variation in the suicide frequency on the whole corresponds very closely to the range in temperature, being strongly marked where the temperature differences are strongly marked. It is evident from this that large temperature fluctuations tend to bring about large changes in the frequency of suicide.

(xxxvii.) *Other Diseases.* The number of causes included under this heading is a very large one, amounting to no less than 79 of the items shewn in the detailed classification, and deaths were recorded under every one of these with the exception of the following

six:—Glanders and farcy, rabies, intestinal parasites, non-puerperal diseases of the breast (cancer excepted), and amputation. The total number of deaths under "other diseases" in 1907 was 6677, viz., 3933 males and 2744 females; in 1908, 7417, viz., 4351 males and 3066 females; in 1909, 7419, viz., 4344 males and 3075 females; in 1910, 7794, viz., 4590 males and 3204 females; and in 1911, 7652, viz., males, 4508; females, 3144. Following the revised edition of the classification the following changes have been made in this heading during 1910: beri-beri is now included under this heading instead of under xii., "Other Epidemic Diseases." Other diseases of the respiratory system (1872 deaths) are now shewn under a new head (xxiii.), and appendicitis and typhlitis (320 deaths) under head xxvi. Some of the diseases included here account for very considerable numbers of deaths. Thus there were 686 deaths ascribed to diarrhoea and enteritis of children over two years of age and of adults, 398 to convulsions of children under five years of age; 413 to diabetes; 355 to paralysis without indicated cause; and 466 to diseases of the arteries, atheroma, and aneurism. Particulars of the deaths included in 1911 are shewn in the following table:—

CAUSES OF DEATH INCLUDED UNDER "OTHER DISEASES," COMMONWEALTH, 1911.

Causes.	M.	F.	T'tal.	Causes.	M.	F.	T'tal.
Purulent Infection and Septicæmia	79	76	155	Diseases of the Veins (Varices, Varicose Ulcers, Hæmorrhoids)	6	13	19
Anthrax	10	4	14	Diseases of the Lymphatic System	3	6	9
Tetanus	88	31	119	Hæmorrhages, Other Diseases of Circulatory System ...	21	10	31
Mycoses	6	...	6	Diseases of the Mouth and its Associated Organs	9	10	19
Pellagra	1	...	1	Diseases of the Pharynx ...	21	20	41
Beri beri	66	...	66	Diseases of the Oesophagus ...	10	3	13
Rickets	5	3	8	Diarrhoea and Enteritis of Children over two years of age and Adults ...	333	353	686
Syphilis	97	64	161	Ankylostomiasis	4	3	7
Gonococcus Infection ...	1	1	2	Other Diseases of the Intestine	38	23	61
Other Tumours (Tumours of the female genital organs excepted) ...	28	12	40	Acute Yellow Atrophy of the Liver	3	13	16
Acute Articular Rheumatism	84	91	175	Hydatid Tumours of the Liver	30	25	55
Chronic Rheumatism and Gout	34	40	74	Biliary Calculi	14	52	66
Scurvy	5	4	9	Other Diseases of the Liver ...	85	93	178
Diabetes	175	238	413	Diseases of the Spleen	3	1	4
Exophthalmic Goitre ...	2	58	60	Simple Peritonitis (non-puerperal)	72	83	155
Addison's Disease	10	13	23	Other Diseases of the Digestive System	16	12	28
Leucæmia	45	38	83	Chyluria	1	...	1
Anæmia, Chlorosis	107	126	233	Other Diseases of the Kidneys and their Adnexa ...	75	23	98
Other General Diseases ...	48	43	91	Calculi of Urinary Passages ...	43	13	56
Acute and Chronic Alcoholism	109	35	144	Diseases of the Bladder ...	111	18	129
Chronic Lead Poisoning ...	6	1	7	Other Diseases of the Urethra, Urinary Abscess, etc. ...	19	2	21
Other Chronic Poisonings due to occupations	4	...	4	Diseases of the Prostate ...	181	...	181
Other Chronic Poisonings ...	6	3	9	Non-venereal Diseases of the Male Genital Organs ...	3	...	3
Encephalitis	33	29	62	Gangrene	70	55	125
Progressive Locomotor Ataxia	58	11	69	Furuncle	8	4	12
Other Diseases of the Spinal Cord	154	73	227	Acute Abscess	22	11	33
Paralysis without indicated cause	202	153	355	Other Diseases of the Skin and Adnexa	27	26	53
General Paralysis	150	24	174	Non-tuberculous Diseases of the Bones	30	13	43
Other Forms of Mental Alienation	29	28	57	Other Diseases of the Joints (Tuberculosis & Rheumatism excepted)	5	5	10
Epilepsy	107	63	170	Other Diseases of the Organs of Locomotion	1	...	1
Convulsions (non-puerperal) ...	8	24	32	Other Diseases peculiar to Infancy	290	207	497
Convulsions of Children under five years of age	238	160	398	Want of Care (Infants) ...	7	7	14
Chorea	1	3	4	Total Deaths	4,508	3,144	7,652
Neuralgia and Neuritis ...	13	12	25				
Other Diseases of the Nervous System	133	105	238				
Diseases of the Eye	2	1	3				
Diseases of the Ear	6	3	9				
Pericarditis	54	22	76				
Acute Endocarditis	134	114	248				
Angina Pectoris	82	39	121				
Diseases of the Arteries, Atheroma, Aneurism	347	119	466				
Embolism and Thrombosis ...	180	176	356				

(xxxviii.) *Unspecified or Ill-defined Diseases.* The number of cases which has to be included here is a considerable one from year to year, having numbered 1275 in 1907, 1262 in 1908, 1087 in 1909, 598, viz., 376 males and 222 females, in 1910, and 460, viz., 299 males and 161 females in 1911. The detailed classification distinguishes these ill-defined diseases under three headings:—Dropsy, including such definitions as anasarca, ascites, general oedema, etc.; sudden death, including syncope; and unspecified or ill-defined causes, of which the following are specimens:—Asthenia, coma, dentition, exhaustion, heart failure, etc. In 1911 the number of cases of death which would have to be classed under the first of these categories was 33; those belonging to the second, 48; and those belonging to the third, 379. It is, of course, true that there must always occur some cases where the disease is not well characterised, or where sufficient information is not procurable to allow of a clear definition being given in the certificate of death, but in the majority of cases included under this heading a more complete diagnosis and consequently a more satisfactory certificate would no doubt have been possible.

In the fifth issue of this Year Book, pp. 234, etc., some observations were published, dealing with the incidence of scarlet fever, measles, whooping cough, diphtheria and croup, typhoid, diarrhoea, enteritis, and dysentery. It has not been judged expedient to reprint the paper in the present issue.

18. Causes of Death in Classes.—The figures presented in the preceding paragraphs relate to certain definite causes of death. It is almost generally acknowledged that figures of this kind are of greater value in medical statistics than is a classification under general headings. The classification under fourteen general headings adopted by the compiler of The International Nomenclature is, however, shewn in the following table, together with the death rates and percentages on total deaths pertaining to those classes:

DEATHS, DEATH RATES (a), AND PERCENTAGES ON TOTAL DEATHS IN CLASSES, 1911.—COMMONWEALTH.

Class.	Total Deaths.			Death Rate. (a)			Percentage on Total Deaths.		
	M.	F.	Total.	M.	F.	Total	M.	F.	Total.
1. General diseases	6,196	5,231	11,427	2.65	2.43	2.54	22.46	25.80	23.89
2. Diseases of the Nervous System & of the Organs of Special Sense	2,630	2,007	4,637	1.13	0.93	1.03	9.53	9.90	9.69
3. Diseases of the Circulatory System	3,590	2,632	6,222	1.54	1.22	1.39	13.01	12.98	13.00
4. Diseases of the Respiratory System	3,168	2,134	5,302	1.36	0.99	1.18	11.49	10.52	11.07
5. Diseases of the Digestive Organs	2,856	2,449	5,305	1.22	1.14	1.18	10.35	12.09	11.08
6. Diseases of the Genito-Urinary System and Adnexa	1,630	930	2,560	0.70	0.43	0.57	5.91	4.58	5.35
7. Puerperal Condition	...	615	615	...	0.29	0.15	...	3.03	1.28
8. Diseases of the Skin and of the Cellular Tissue	127	96	223	0.04	0.04	0.05	0.46	0.47	0.47
9. Diseases of the Organs of Locomotion	36	18	54	0.02	0.01	0.01	0.13	0.09	0.11
10. Malformations	227	177	404	0.10	0.08	0.09	0.82	0.87	0.84
11. Infancy	1,838	1,411	3,249	0.79	0.65	0.72	6.66	6.96	6.78
12. Old Age	2,225	1,624	3,849	0.95	0.75	0.86	8.06	8.01	8.04
13. Violence	2,769	793	3,562	1.19	0.37	0.79	10.04	3.91	7.44
14. Ill-defined Diseases	299	161	460	0.13	0.07	0.10	1.08	0.79	0.96
Total	27,591	20,278	47,869	11.82	9.40	10.66	100.00	100.00	100.00

a Number of deaths per 1000 of mean population.

19. Deaths of Children under 1 Year.—"Bulletin No. 29; Commonwealth Demography" contains tables shewing the age at death of children dying during the first year of life from twenty causes. In the Bulletin mentioned the particulars are published for the States, Territories and Commonwealth, but the totals for the Commonwealth only are here shewn.

The figures for death from lack of care and other diseases peculiar to early infancy include children under four months of age only.

DEATHS OF CHILDREN UNDER 1 YEAR, COMMONWEALTH, 1911.

(a) MALES.

Age at Death.				Whooping Cough.	Pulmonary Tuberculosis.	Tubercular Meningitis.	Abdominal Tuberculosis.	Pott's Disease.	Tuberculosis of other Organs.	Syphilis.	Menigitis.	Convulsions.	Acute Bronchitis.
Under 1 week	...	...	...	...	...	...	...	...	...	5	7	64	7
1 week and under 2	...	...	...	2	...	...	...	...	...	3	3	32	9
2 weeks	3	...	...	2	...	...	...	...	...	6	4	15	12
3	...	...	...	4	...	...	...	...	...	7	4	5	16
1 month	...	...	...	14	...	1	...	...	1	11	10	16	49
2 months	3	...	...	15	2	4	...	...	...	11	8	10	16
3	...	...	...	5	...	...	2	...	...	4	9	9	16
4	...	...	...	5	1	2	2	...	1	2	7	6	7
5	...	...	...	9	...	...	...	...	...	3	10	8	6
6	...	...	...	9	...	3	2	...	...	3	14	9	2
7	...	...	...	8	...	2	1	...	...	4	12	9	2
8	...	...	...	5	1	1	1	...	...	2	13	3	3
9	...	...	...	4	1	2	...	...	...	1	14	8	2
10	...	...	...	6	...	2	2	1	...	1	6	4	7
11	...	...	...	4	...	4	3	...	...	...	12	5	1
Total under 1 year				93	5	21	13	1	2	62	133	203	155

Age at Death.				Broncho-Pneumonia.	Pneumonia.	Diarrhoea and Enteritis.	Hernia and Intestinal Obstruction.	Malformations.	Congenital Debility.	Other Diseases peculiar to Early Infancy.	Lack of Care.	Other External Violence.
Under 1 week	...	...	...	...	3	4	7	90	925	244	2	14
1 week and under 2	...	...	...	5	8	24	2	23	139	22	...	...
2 weeks	3	...	...	11	6	27	1	14	86	11	...	1
3	...	...	...	11	7	38	...	10	63	8	2	1
1 month	...	...	...	35	17	108	2	22	120	2	2	5
2 months	3	...	...	14	9	135	3	15	72	1	1	4
3	...	...	...	19	13	127	5	9	35	2	...	5
4	...	...	...	14	6	137	4	4	24	...	...	1
5	...	...	...	14	5	99	5	3	24	...	...	1
6	...	...	...	10	5	116	4	3	12	...	...	2
7	...	...	...	14	4	92	7	4	14	...	...	1
8	...	...	...	19	15	88	3	1	9	...	...	...
9	...	...	...	11	7	61	5	3	6	...	...	...
10	...	...	...	7	9	53	1	2	4	...	...	...
11	...	...	...	9	8	71	1	4	8	...	...	...
Total under 1 year				193	122	1,180	50	207	1,541	290	7	35

DEATHS OF CHILDREN UNDER 1 YEAR, COMMONWEALTH, 1911.

(b) FEMALES.

Age at Death.	Whooping Cough.	Pulmonary Tuberculosis.	Acute Military Tuberculosis.	Tubercular Meningitis.	Abdominal Tuberculosis.	Disseminated Tuberculosis.	Syphilis.	Meningitis.	Convulsions.	Acute Bronchitis.
Under 1 week	...	...	...	...	...	...	3	7	31	1
1 week and under 2	1	...	...	...	...	...	1	4	23	8
2 weeks	3	2	...	...	...	...	4	...	4	11
3 "	4	...	...	...	...	...	2	1	5	7
1 month	2	15	...	...	...	...	9	3	7	36
2 months	3	14	...	1	1	...	3	5	7	19
3 "	4	5	...	...	3	...	3	7	3	13
4 "	5	10	1	2	2	...	2	6	6	7
5 "	6	4	1	3	3	...	2	10	4	7
6 "	7	4	1	1	3	...	2	11	6	7
7 "	8	...	...	1	...	...	4	8	2	3
8 "	9	10	...	...	...	...	...	9	2	4
9 "	10	7	...	4	...	...	...	7	2	4
10 "	11	3	...	5	1	...	1	8	2	2
11 "	12	3	1	...	...	...	1	4	3	2
Total under 1 year	99	5	1	17	10	...	42	90	109	131

Age at Death.	Broncho-Pneumonia.	Pneumonia.	Diarrhoea and Enteritis.	Hernia and Intestinal Obstruction.	Malformations.	Congenital Debility.	Other Diseases peculiar to Early Infancy.	Lack of Care.	Other External Violence.
Under 1 week	3	4	2	5	82	700	169	5	6
1 week and under 2	3	2	10	3	15	102	15	...	1
2 weeks	3	3	13	...	3	66	9	...	1
3 "	4	3	10	3	8	48	6	...	...
1 month	2	30	83	5	8	80	3	...	...
2 months	3	25	103	1	8	52	4	...	3
3 "	4	12	101	1	5	35	1	1	...
4 "	5	15	116	3	6	21	...	...	1
5 "	6	11	85	7	6	32	...	...	...
6 "	7	12	72	3	3	15	...	...	...
7 "	8	2	80	3	1	18	...	...	1
8 "	9	8	68	1	2	8	...	...	...
9 "	10	11	50	1	4	5	...	...	...
10 "	11	10	53	...	4	7	...	...	1
11 "	12	4	50	2	3	8	...	...	...
Total under 1 year	157	110	896	38	158	1,197	207	6	16

DEATHS OF CHILDREN UNDER 1 YEAR, COMMONWEALTH, 1911.

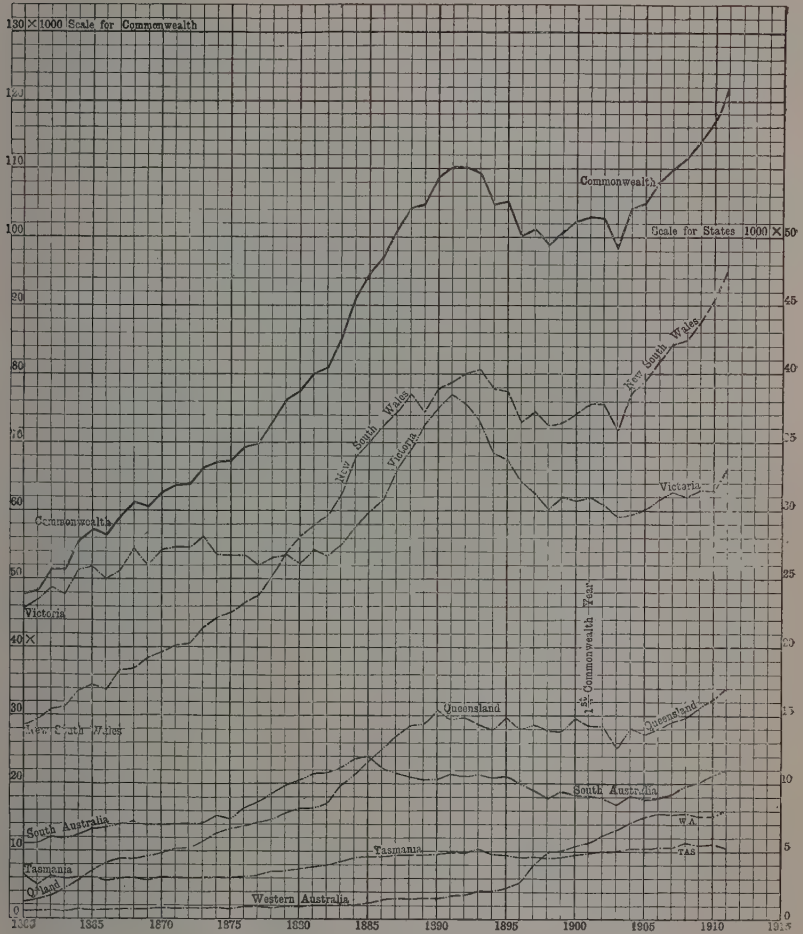
(c) MALES AND FEMALES.

Age at Death.			Whooping Cough.	Pulmonary Tuberculosis.	Acute Miliary Tuberculosis.	Tubercular Meningitis.	Abdominal Tuberculosis.	Pott's Disease.	Tuberculosis of other Organs.	Syphilis.	Meningitis.	Convulsions.	Acute Bronchitis.
Under 1 week	...	...	...	...	...	...	...	...	...	8	14	95	8
1 week and under 2	...	...	3	...	...	...	...	...	...	4	7	55	17
2 weeks	3	...	8	2	...	...	...	...	...	10	4	19	23
3	4	...	13	...	...	...	...	...	1	9	5	10	23
1 month	2	...	29	...	...	1	...	...	...	20	13	23	85
2 months	3	...	29	2	...	5	1	...	...	19	13	17	35
3	4	...	10	...	...	...	5	...	...	7	16	12	29
4	5	...	18	2	...	4	4	...	1	4	13	12	14
5	6	...	13	1	...	3	...	...	...	5	20	12	13
6	7	...	13	1	...	4	5	...	...	5	25	17	9
7	8	...	14	...	...	3	1	...	...	8	20	11	5
8	9	...	15	1	...	1	1	...	...	2	22	5	7
9	10	...	11	1	...	6	...	...	...	...	21	10	6
10	11	...	9	...	...	7	3	...	...	2	14	6	9
11	12	...	7	...	1	4	3	1	...	1	16	8	3
Total under 1 year			192	10	1	38	23	1	2	104	223	312	286

Age at Death.			Broncho-Pneumonia.	Pneumonia.	Diarrhoea and Enteritis.	Hernia and Intestinal Obstruction.	Malformations.	Congenital Debility.	Other Diseases peculiar to Early Infancy.	Lack of Care.	Other External Violence.
Under 1 week	...	...	3	7	6	12	172	1,625	413	7	20
1 week and under 2	...	...	8	10	34	5	38	241	37	...	1
2 weeks	3	...	19	9	40	1	17	152	20	...	2
3	4	...	14	14	48	3	18	111	14	2	1
1 month	2	...	65	25	191	7	30	200	5	2	7
2 months	3	...	39	16	238	4	23	124	5	1	7
3	4	...	31	26	228	6	14	70	3	1	5
4	5	...	29	9	253	7	10	45	...	...	2
5	6	...	25	17	184	12	9	56	...	...	1
6	7	...	22	16	188	7	6	27	...	...	2
7	8	...	16	10	172	10	5	32	...	...	2
8	9	...	28	23	156	4	3	17	...	...	...
9	10	...	21	18	111	6	7	11	...	...	...
10	11	...	17	17	106	1	6	11	...	...	1
11	12	...	13	15	121	3	7	16	...	...	...
Total under 1 year			350	232	2,076	88	365	2,738	497	13	51

It will be seen that the maximum number of deaths from syphilis, convulsions, pneumonia, hernia and intestinal obstruction, malformations, congenital debility, icterus and sclerema, other diseases peculiar to early infancy, lack of care, and other external violence occurred during the first month of life, while acute bronchitis

GRAPHS SHEWING TOTAL ANNUAL BIRTHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1911.



(See Table page 188.)

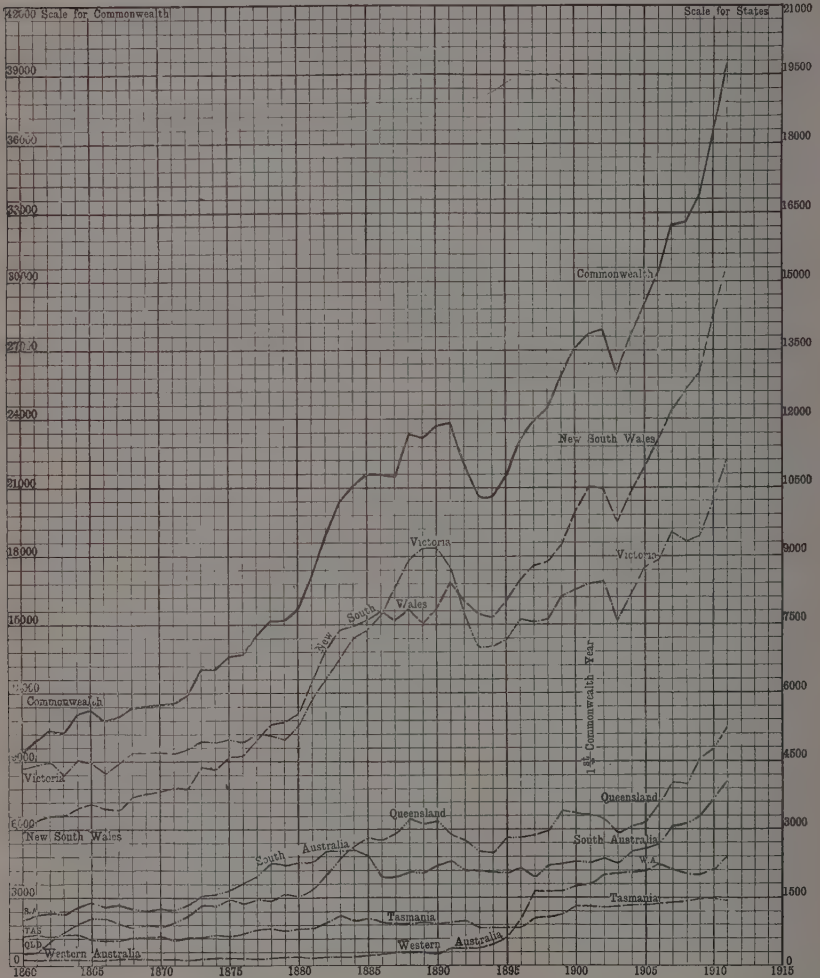
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons for the Commonwealth, and 1000 for the States.

The scale on the left relates to the Commonwealth, and that on the right to the States.

The distances upwards from the common zero lines of the States and Commonwealth, marked 0, denote the total annual number of births in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the graphs refer are written thereon, and the characters of the lines used are as follows:—Commonwealth, —————; New South Wales, - - - - -; Victoria, - - - - -; Queensland, - - - - -; South Australia, - - - - -; Western Australia, - - - - -; Tasmania, - - - - -.

GRAPHS SHEWING TOTAL ANNUAL MARRIAGES IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1911.



(See Table page 201.)

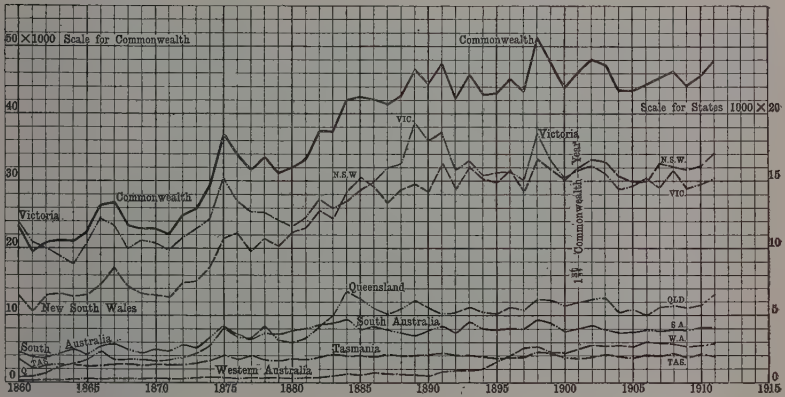
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 600 marriages for the Commonwealth and 300 for the States.

The scale on the left relates to the Commonwealth, and that on the right relates to the States.

The distances upwards from the zero line, marked 0, denote the total annual number of marriages in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the graphs refer are written thereon, and the lines used are similar to those for births on page 249.

GRAPHS SHEWING TOTAL ANNUAL DEATHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1911.



(See Table page 210.)

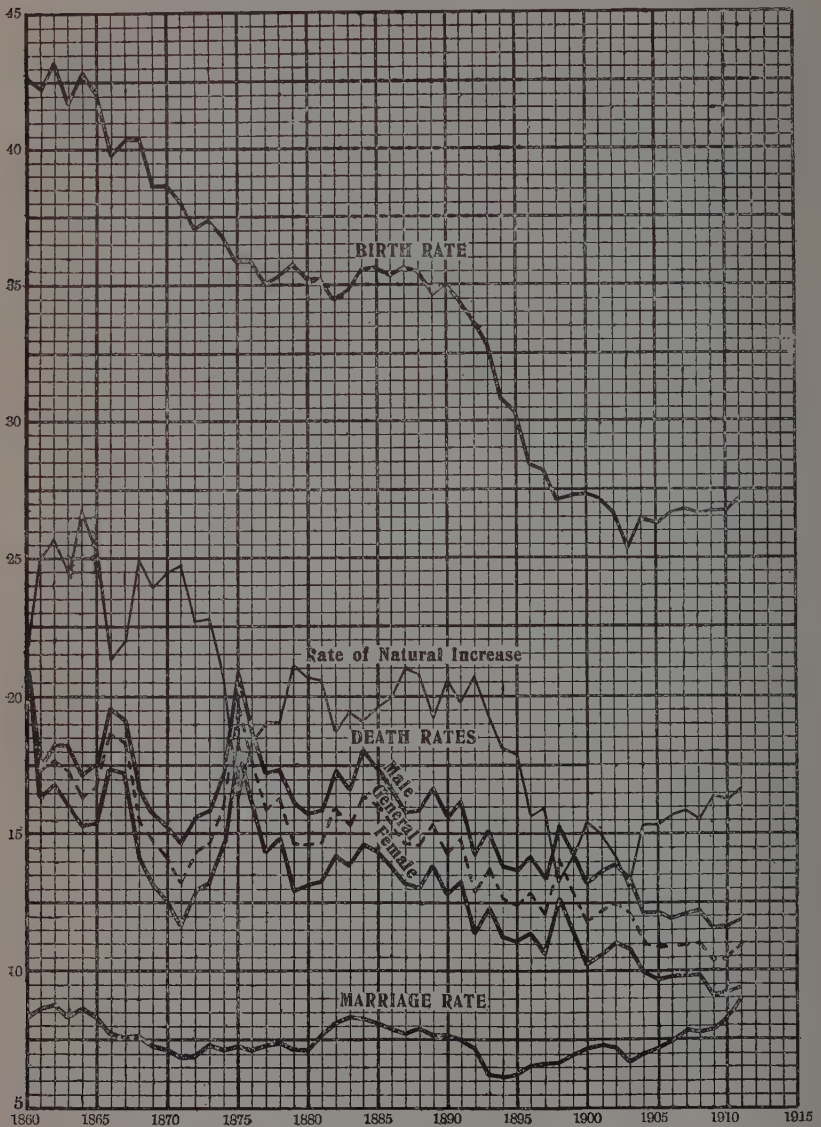
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons for the Commonwealth and 1000 for the States.

The scale on the left relates to the Commonwealth, and that on the right relates to the States.

The distances upwards from the common zero line for States and Commonwealth, marked 0, denote the total annual number of deaths in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the curves refer are written thereon, and the lines used are similar to those for births on page 249.

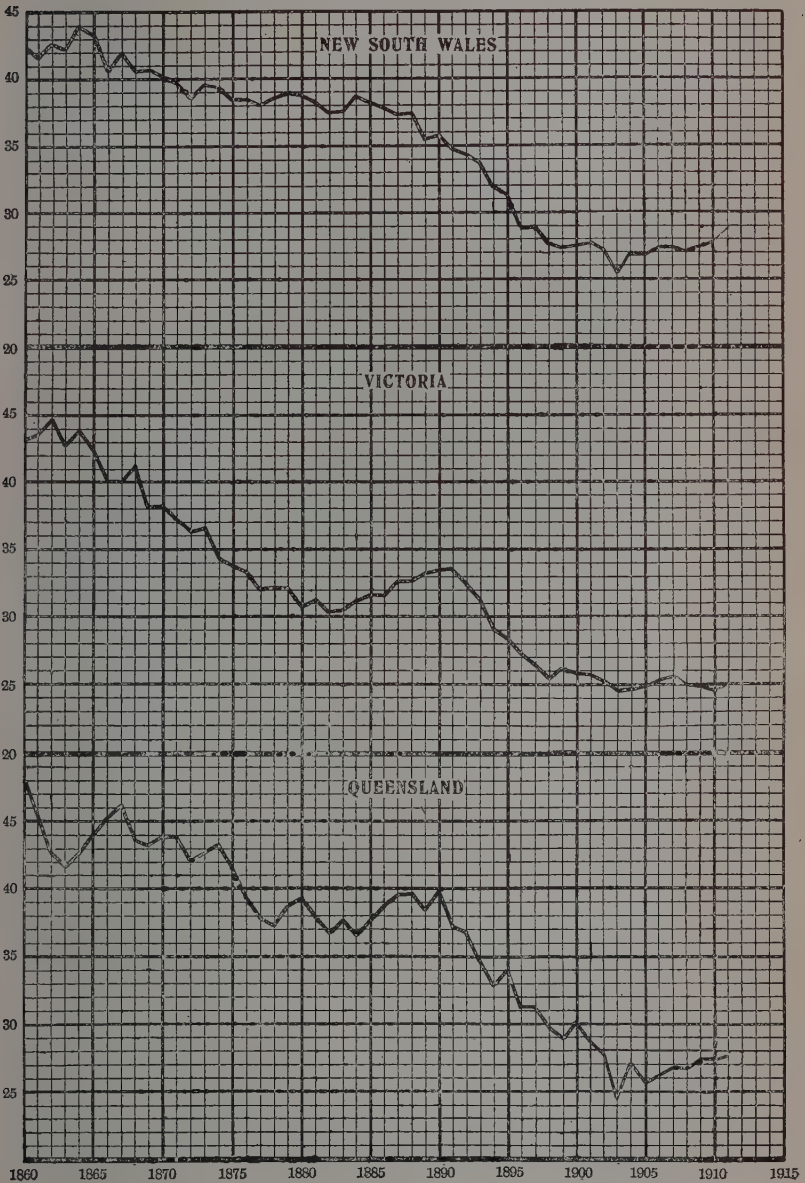
GRAPHS SHEWING GENERAL BIRTH, NATURAL INCREASE, DEATH (MALE, GENERAL AND FEMALE), AND MARRIAGE RATES IN THE COMMONWEALTH OF AUSTRALIA, 1860-1911.



(See pages 188, 202, 210 and 264.)

EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height, according to the character of the curve, one half per thousand of the population—the basic line being five per thousand of the population.

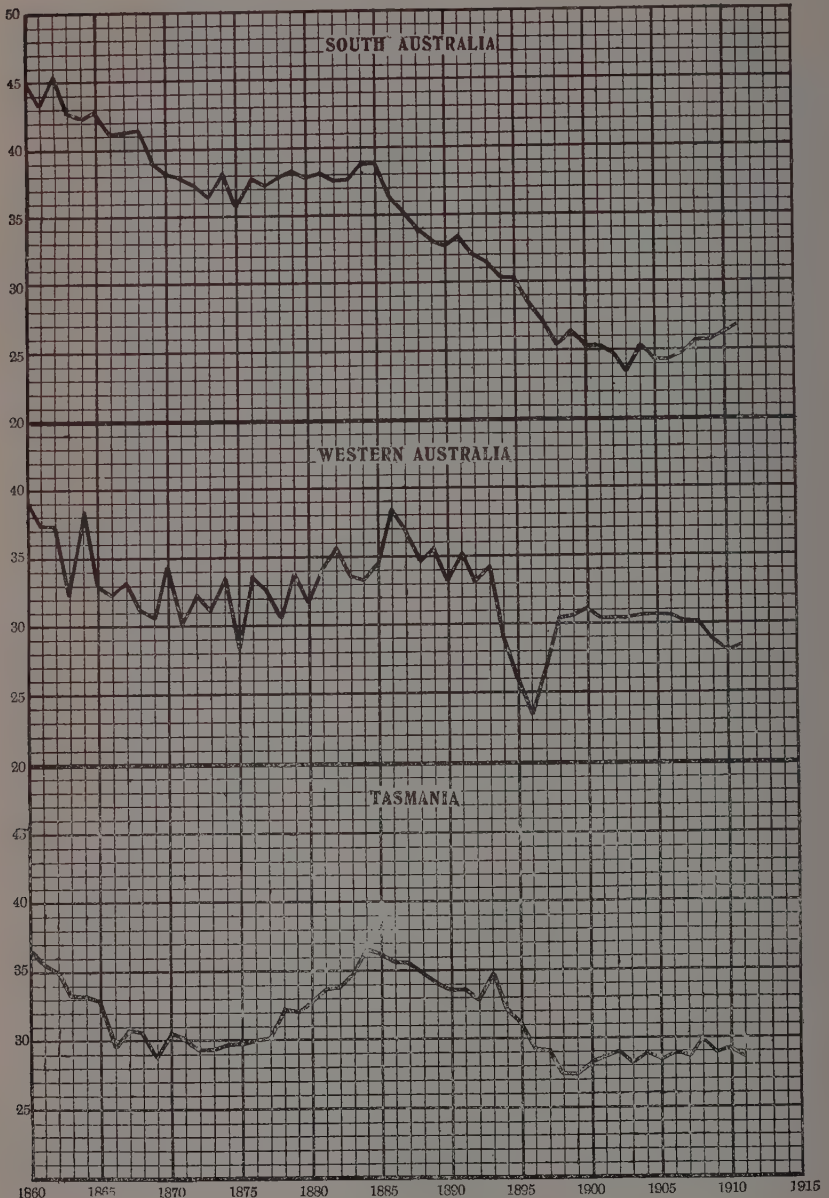
GRAPHS SHEWING BIRTH RATES IN THE STATES OF NEW SOUTH WALES,
VICTORIA, AND QUEENSLAND, 1860-1911.



(See Table page 188.)

EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one birth per thousand of the population—the basic line for each State being twenty per thousand of the population.

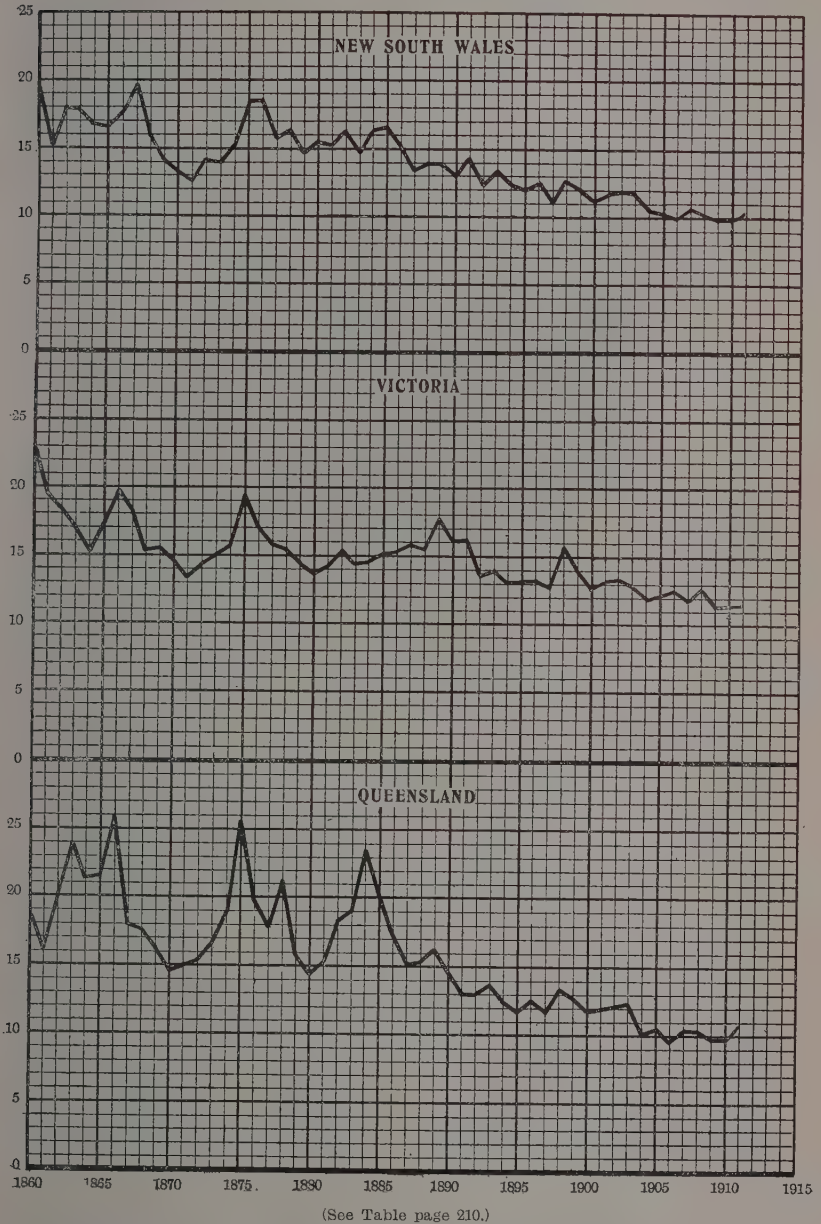
GRAPHS SHEWING BIRTH RATES IN THE STATES OF SOUTH AUSTRALIA,
WESTERN AUSTRALIA, AND TASMANIA, 1860-1911.



(See Table page 188.)

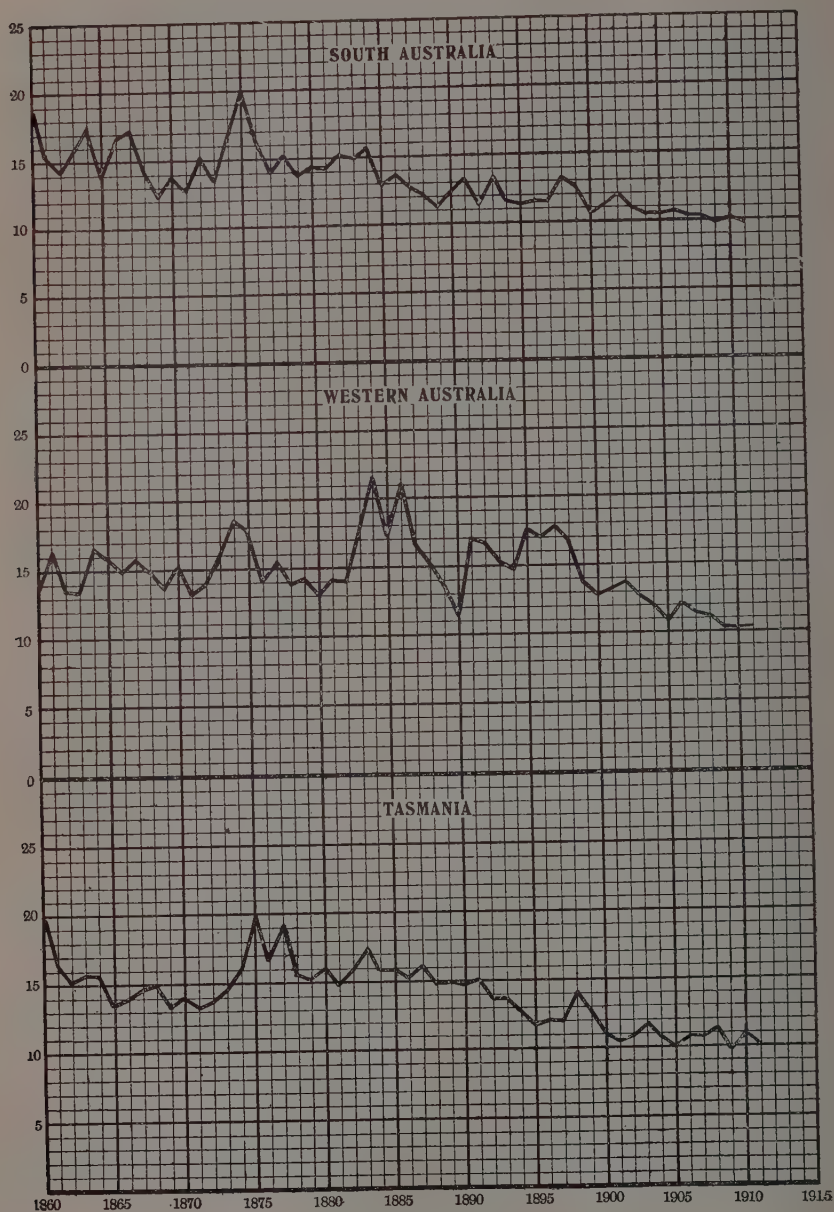
EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one birth per thousand of the population—the basic line for each State being twenty per thousand of the population.

GRAPHS SHEWING DEATH RATES IN THE STATES OF NEW SOUTH WALES,
VICTORIA, AND QUEENSLAND, 1860-1911.



EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one death per thousand of the population. The zero for each State is shewn by a thickened line.

GRAPHS SHEWING DEATH RATES IN THE STATES OF SOUTH AUSTRALIA,
WESTERN AUSTRALIA, AND TASMANIA, 1860-1911.



(See Table page 210.)

EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one death per thousand of the population. The zero for each State is shewn by a thickened line.

and broncho-pneumonia were most fatal during the second month. Diarrhœa and enteritis carried off more children in the fifth month than in any other, the numbers gradually decreasing toward the end of the year. Whooping cough reached its maximum during the second and third month of life.

20. **Age at Death of Married Males and Females, and Issue.**—"Bulletin No. 29 Commonwealth Demography" contains a number of tables, for the Commonwealth, shewing the age at marriage, age at death, duration of life after marriage, birthplaces, and occupations, in combination with the issue, of married persons who died in 1911. A short summary of the tables mentioned is given hereunder. Deaths of married males in 1911 numbered 12,213, and of married females, 11,423. The ages at death of the males ranged from 19 to 103 years, and those of the females, from 17 to 102 years. The total number of children in the families of the 12,213 males was 66,252, the maximum in one family being 29; and of the 11,423 females, 61,089, with a maximum of 22. The average number of children is shewn for various age-groups in the following table:—

AGE AT DEATH OF MARRIED MALES AND FEMALES, AND AVERAGE ISSUE.

COMMONWEALTH, 1911.

Age at Death.	Average Family of Males.	Average Family of Females.	Age at Death.	Average Family of Males.	Average Family of Females.
Under 20 years	0.33	0.94	70 to 74 years	6.41	6.38
20 to 24 years	0.77	1.27	75 " 79	6.75	6.72
25 " 29	1.25	1.82	80 " 84	6.68	6.22
30 " 34	2.05	2.74	85 " 89	6.67	5.97
35 " 39	2.80	3.64	90 " 94	6.03	5.69
40 " 44	3.47	4.09	95 " 99	7.30	5.05
45 " 49	4.09	4.54	100 years and upwards	9.33	5.17
50 " 54	4.75	5.35	Age not stated	4.33	4.60
55 " 59	5.44	5.86			
60 " 64	5.95	5.99			
65 " 69	6.23	6.50	All ages	5.42	5.35

The figures shewn in the preceding table include the issue both living and dead; the proportion between the two, taking deceased males and females together, was about as 1000 to 323, or, roughly speaking, as three to one. The totals are shewn in the following table:—

ISSUE OF MARRIED MALES AND FEMALES.

COMMONWEALTH, 1911.

Issue of Married Males.	Males.	Females.	Total.	Issue of Married Females.	Males.	Females.	Total.
Living	26,107	25,072	51,179	Living	22,799	22,238	45,037
Dead	7,877	7,196	15,073	Dead	8,561	7,491	16,052
Total	33,984	32,268	66,252	Total	31,360	29,729	61,089

These figures shew a masculinity in the births of 105.40, which agrees fairly well with the experience of the birth statistics, the masculinity of the births in the Commonwealth from 1902 to 1911 having ranged from 104.73 to 106.38.

As a matter of curiosity it may be mentioned that the family of twenty-nine belonged to a father who died at the age of 81, and that it had originally comprised sixteen sons and thirteen daughters, of whom eleven sons and seven daughters survived their father.

21. Age at Marriage of Males and Females, and Issue.—While the table giving the average families of married males and females naturally shews an increase in the averages with advancing ages at death, the following table, which gives the average families of males and females according to the age at marriage of the deceased parents, shews a corresponding decrease in the averages as the age at marriage advances:—

AGE AT MARRIAGE OF MALES AND FEMALES, AND AVERAGE ISSUE.

COMMONWEALTH, 1911.

Age at Marriage.	Average Family of Males.	Average Family of Females.	Age at Marriage.	Average Family of Males.	Average Family of Females.
Under 20 years ...	6.97	7.11	55 to 59 years ...	1.66	...
20 to 24 years ...	6.34	5.77	60 „ 64 „ ...	2.00	...
25 „ 29 „ ...	5.70	4.27	65 years and upwards ...	1.00	...
30 „ 34 „ ...	4.92	3.04	Age not stated ...	5.40	5.23
35 „ 39 „ ...	4.05	1.68			
40 „ 44 „ ...	3.43	0.72			
45 „ 49 „ ...	2.59	0.26			
50 „ 54 „ ...	2.45	...	All ages ...	5.42	5.35

It will be seen that of women who were married at ages from 40 to 44 years, seven in every ten gave birth to a child, while in the case of women who were married at ages from 45 to 49 years, the proportion fell to about one in every four.

22. Duration of Life after Marriage of Males and Females.—The duration of life after marriage has been tabulated for males and females both in combination with the age at marriage, and with the total and average issue. The tables shewing the result do not, however, lend themselves to condensation, and are, therefore, omitted here. They will be found in "Bulletin No. 29 of Commonwealth Demography," pages 158 to 163.

23. Birthplaces of Married Males and Females, and Issue.—The following table shews the birthplaces of married males and females whose deaths were registered in 1911, together with their average issue. No generalisations can, of course, be made in those cases where the number of deaths is small, and where the average family had to be worked out on small figures. But where the figures are comparatively large, as in the case of natives of the Commonwealth, differences occur between the averages of the individual States which appear inexplicable on any other ground than that of inefficient registration in some of the States. It will be noted that the differences occur both in the male and female averages. Although the figures apply to the Commonwealth as a whole, it must be borne in mind that the vast majority of deaths of natives of any one State are registered in that particular State. For the whole Commonwealth the average family of deceased males was 4.71, and of deceased females, 4.57.

BIRTHPLACES OF MARRIED MALES AND FEMALES, AND AVERAGE ISSUE.
COMMONWEALTH, 1911.

Birthplaces.	Married Males.		Married Females.		Birthplaces.	Married Males.		Married Females.	
	Deaths.	Average Family.	Deaths.	Average Family.		Deaths.	Average Family.	Deaths.	Average Family.
New South Wales	1,654	5.15	1,861	5.11	Japan	5	0.80	1	0.00
Victoria	1,313	4.09	1,448	3.88	Philippine Islands	1	2.00	...	...
Queensland	203	3.52	275	3.53	Straits Settlements	1	0.00	...	...
South Australia	487	4.63	569	4.41	Syria	6	5.17	2	2.00
Western Australia	53	5.32	55	5.45	Other Asiatic Countries	2	1.50	...	...
Tasmania	360	5.94	358	5.43	Cape of Good Hope	2	7.50	2	5.00
Northern Territory	4	0.25	...	...	Mauritius	6	3.70	4	2.00
New Zealand	64	3.89	56	3.84	South Africa (so descd.)	5	2.00	7	6.29
England	3,972	5.87	3,087	5.86	Other African British Possessions	3	3.33	2	5.00
Wales	107	5.56	65	5.80	Canada	39	5.43	13	6.69
Scotland	1,133	5.89	1,002	6.09	Jamaica	1	1.00	3	3.67
Ireland	1,766	6.11	2,118	5.83	Newfoundland	1	8.00	1	12.00
Isle of Man	8	6.75	3	8.00	Other American British Possessions	1	12.00	...	...
Other European British Possessions	15	6.40	21	5.43	Argentina	1	3.00	...	...
Austria-Hungary	21	3.48	3	9.67	Brazil	1	2.00	1	8.00
Belgium	5	4.60	...	...	United States	40	3.78	17	4.94
Denmark	59	5.35	24	5.96	Other American Countries	15	4.80	9	4.11
France	43	3.51	14	4.79	Fiji	1	0.00	1	0.00
Germany	496	5.90	254	6.61	Friendly Islands	...	...	1	0.00
Greece	9	5.78	2	6.50	Other Polynesian Islands	...	...	...	...
Italy	38	4.88	8	3.88	British Possessions	2	5.50	1	8.00
Netherlands	6	4.83	2	4.00	New Caledonia	1	8.00	2	3.50
Norway	35	4.23	4	4.50	New Hebrides	...	...	1	6.00
Portugal	8	5.13	1	10.00	Other Polynesian Islands	...	...	1	4.00
Russia	34	4.33	5	5.00	S. Sea Islands (so descd.)	1	1.00	2	2.50
Spain	3	5.33	1	5.00	At Sea	32	4.81	35	6.03
Sweden	51	3.80	11	3.91	Not stated	40	3.85	37	3.73
Switzerland	27	6.11	13	5.00					
Other Europ. Countries	1	6.00	1	2.00					
British India	29	4.14	17	6.41					
Ceylon	2	2.00	...	...			
China	60	2.37	2	4.50					
					Total	12,213	5.42	11,423	5.35

24.—Occupations of Married Males, and Issue.—A final tabulation shews the average issue in combination with the occupation of deceased males. When these figures are available for a number of years they will afford some clue to the much debated question as to the decrease in the birth rate among various classes of the population.

OCCUPATIONS OF MARRIED MALES, AND AVERAGE ISSUE.
COMMONWEALTH, 1911.

Occupations.	Deaths of Married Males.	Average Family.
Professional class	681	4.55
Domestic class	452	3.92
Mercantile class	1,407	4.70
Engaged in transport and communication	1,001	4.56
Manufacturing class	1,325	5.18
Engaged in building and construction	757	5.88
Indefinite industrial workers	1,899	5.32
Agricultural class	2,035	6.74
Pastoral class	476	6.21
Working in mines and quarries	1,014	5.38
Other primary producers	85	5.35
Independent means	796	5.75
Dependents	44	4.30
Occupation not stated	241	6.01
Total	12,213	5.42

In the fifth issue of this Year Book (pp. 227 to 229), a series of observations was published dealing with the Commonwealth Rates of Infantile Mortality. These observations are not reprinted in the present issue.

§ 4. Graphical Representation of Vital Statistics.

1. **General.**—The progressive fluctuations of the numbers representing the total births and marriages are important indexes of the economic conditions and social ideals of a community. For this reason graphs have been prepared (see pages 249 and 250), shewing these fluctuations from 1860 to 1911, both for the States and the Commonwealth. The facts are very significant from the national point of view and call for serious consideration. To properly appreciate the situation it should be remembered that, normally, the increase of births and also of marriages will be similar to the increase of population. Although the marriage curve shews a falling off in marriages after 1891 (see page 250), it shews a recovery in 1894, and, with the exception of a small fall for 1903, it has continually advanced. The same characteristic is not seen in the curve of births, which discloses a recovering tendency only in 1904.

The table printed below shews the number of births, marriages and deaths which would have been experienced had the rate for 1890 continued, and reveals the significance of the facts disclosed by the curves. It may be remarked that the death rate has greatly improved, and among other countries Australia stands in a very favourable position in this respect. At the same time the decline in the marriage rate, overtaken once more in 1907, and the still more serious decline in the birth rate, in a country but sparsely populated, have an obvious and most important bearing on the national future, and on questions concerning the extent to which it is desirable to promote immigration.

ACTUAL BIRTHS, DEATHS, AND MARRIAGES,

EXPERIENCED IN THE COMMONWEALTH DURING THE YEARS 1890 TO 1911,
COMPARED WITH THE NUMBER THAT WOULD HAVE OCCURRED IF THE
RATES OF 1890 HAD REMAINED IN OPERATION.

Year.	BIRTHS.		DEATHS.		MARRIAGES.	
	Actual.	Number of Births that would have been experienced if the 1890 birth rate had been in operation.	Actual.	Number of Deaths that would have been experienced if the 1890 death rate had been in operation.	Actual.	Number of Marriages that would have been experienced if the 1890 marriage rate had been in operation.
1890	108,683		44,449		23,725	
1891	110,187	111,802	47,430	45,737	23,862	24,419
1892	110,158	114,502	42,268	46,842	22,049	25,009
1893	109,322	116,617	45,801	47,707	20,631	25,470
1894	104,660	118,734	42,958	48,573	20,625	25,933
1895	105,084	121,002	43,080	49,501	21,564	26,428
1896	100,134	123,212	45,202	50,405	23,068	26,911
1897	101,137	125,419	43,447	51,308	23,989	27,393
1898	98,845	127,371	51,406	52,106	24,472	27,819
1899	100,638	129,088	47,629	52,809	25,958	28,194
1900	102,221	130,848	44,060	53,529	27,101	28,579
1901	102,945	132,599	46,330	54,245	27,753	28,961
1902	102,776	134,603	48,078	55,065	27,926	29,399
1903	98,443	136,189	47,293	55,714	25,977	29,745
1904	104,113	137,917	43,572	56,420	27,632	30,122
1905	104,941	139,959	43,514	57,256	29,004	30,569
1906	107,890	142,030	44,333	58,103	30,410	31,021
1907	110,347	144,248	45,305	59,011	32,470	31,505
1908	111,545	146,720	46,426	60,022	32,551	32,045
1909	114,071	149,526	44,172	61,170	33,775	32,658
1910	116,801	152,869	45,590	62,537	36,592	33,388
1911	122,193	157,072	47,869	64,257	39,482	34,306

2. Graphs of Annual Births, Commonwealth and States (page 249).—A striking feature of the graphs of births is the practically continuous increase in the number of births exhibited in the graph for the Commonwealth from 1860 to 1891, and the marked variations of subsequent years. As the curve clearly shews, a turning point in the number of births occurred in 1891, whilst, as regards the separate States, New South Wales and Tasmania date their decline in number from 1893, Victoria from 1891, and Queensland from 1890. In South Australia the corresponding decline took place as early as 1885, while in Western Australia the increase in number of births has been practically continuous throughout.

It is of special interest to note the decline in births associated with the commercial crisis of 1891-3, and also the decline occurring in 1903, an accompaniment of the severe drought of that period.

In the case of New South Wales the graph crosses that of Victoria in 1879, *i.e.*, the births for that year were sensibly identical in the two States. A fairly continuous increase was experienced in the former State from 1860 to 1893, the only marked fluctuation being a sudden decline in 1889 and an equally rapid recovery in 1890. From 1893 to 1898 a somewhat rapid decline again took place, succeeded by a rise, the continuity of which was broken only by a sharp decline in 1903 and recovery in 1904.

In the case of Victoria the graph shews the increase between 1860 and 1880 to have been comparatively slight, the curve being a gradual rise, with fluctuations more or less marked to 1873, with a subsequent decline. From 1880 to 1891 the increase in the number of births is seen to be very rapid and practically continuous, while from 1891 to 1898 an equally sharp and continuous decline was experienced. A further rise and fall took place between 1898 and 1903, succeeded by a continuous rise from the last-mentioned year to 1907, and a slight fall in 1908, followed by a recovery in 1909.

Starting in 1860 with a lower number of births than any State except Western Australia, the Queensland graph shews that the births increased somewhat rapidly until 1867. The equality in the number of births in Queensland and Tasmania in 1864 is shewn by the Queensland curve crossing the Tasmanian curve at the line for that year. From 1867 to 1882 a continuous though somewhat less rapid increase was experienced, followed by a very rapid rise to 1890, in which year Queensland's maximum number of births was recorded. The South Australian graph is crossed by that of Queensland at the year 1885. From 1890 onwards the number of births has fluctuated somewhat, but has, on the whole, retained a practically stationary position at a height rather less than that of 1890. The most serious variation was a sudden fall in 1903, the drought year, and rapid recovery in 1904, with a further fall in 1905 and a continuous rise since 1906.

The South Australian graph, a slow but practically continuous rise from 1860 to 1885, exhibits the steady increase in the total number of births. This rise is followed by a slow but fluctuating decline to 1903, and a slight recovery to 1911.

The Tasmanian curve may be regarded as made up of five portions, of which the first, from 1860 to 1877, represents a period of very slight variation, with, on the whole, an increase; the second, from 1877 to 1884, a period of continuous and moderately rapid increase; the third, from 1884 to 1893, a period of rapid increase; the fourth, from 1893 to 1898, a period of continuous but slow decrease; and the fifth, from 1898 onwards, a period of steady recovery.

The Western Australian curve indicates that an increase, which was practically continuous but very slow, took place from 1860 to 1884, and that a somewhat quicker rate of increase, experienced from 1884 to 1896, was succeeded by a still more rapid and very satisfactory rate of increase from 1896 onwards.

It will be seen that the years in which the highest points were reached by the several curves are as follows:—

State ...	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Year ...	1911	1891	1911	1885	1911	1908	1911

3. **Graphs of Annual Marriages, Commonwealth and States** (page 250).—The Commonwealth marriage graph from 1860 to 1885 reveals a moderate but somewhat fluctuating increase in the annual number of marriages between 1860 and 1871, a more rapid increase between 1871 and 1879, a still more rapid increase between 1879 and 1885. From 1885 to 1891 the numbers continued to increase, but with marked fluctuations in rate. The financial crisis associated with the period subsequent to the latter year was accompanied by a strongly-marked decline in the number of marriages, which reached its lowest point in 1894. From that year onwards a fairly rapid recovery was effected, the record for 1891 being exceeded by that of 1897. This progress was maintained until 1902, when the severe drought of that and the succeeding year were collateral with a rapid fall in the number of marriages. An equally rapid recovery, however, has since taken place, and the number of marriages in the Commonwealth during 1911 was greater than in any preceding year.

4. **Graphs of Annual Deaths, Commonwealth and States** (page 251).—The curves shewing the progression of the annual number of deaths indicate clearly that the periods for which exceptionally large numbers of deaths occurred were:—(a) 1866-7, (b) 1875-6, (c) 1884-5, (d) 1889-1891, (e) 1893, (f) 1898, and (g) 1902-3. It is remarkable that in each of the periods specified the phenomenon of a relatively high number of deaths was experienced in the majority of the States. Thus, as regards 1866-7, all the States except Western Australia and Tasmania were so affected; in 1875-6 all except Western Australia; in 1884-5 all were affected; in 1889 all except Western Australia and South Australia; in 1891 all except Queensland; whilst in 1893 and 1898, and 1902-3 all were affected. The fact that the periods of high death rates have been practically identical in the several States furnishes an indication that the excessive mortality has been due to a considerable extent to some common cause operating throughout the Commonwealth.

It may be noted as curious that periods of heavy mortality have occurred at intervals of approximately of nine years, viz.:—1866-7, 1875-6, 1884-5, 1893, and 1902-3. There are, however, two marked increases between the third and fourth dates, and one between the fourth and fifth. Thus there is no real indication of the periodicity of the death rate.

Periods in which the number of deaths was exceptionally low are far less clearly defined than those in which the number was high, and the agreement amongst the States is also less complete. The principal periods of low mortality may be said to be 1861, 1869-71, 1879, 1892, 1897, 1900, 1904-5, 1909.

5. **Graphs of Annual Birth, Death, and Marriage Rates and of Rate of Natural Increase—Commonwealth** (page 252).—(i.) *General*. These graphs represent the number of births, deaths, and marriages, and the excess of births over deaths (natural increase) per 1000 of the population of the Commonwealth, for each of the years 1860 to 1911.

(ii.) *Births*. In the case of births, the graph indicates a well marked decline in rate during the period, and represents a fall from 42.56 per 1000 of population in 1860 to 27.21 per 1000 in 1911. This enormous reduction has been subject to small fluctuations during the period under review, but may, on the whole, be said to have been in evidence throughout. There are, however, two periods of arrested decline noticeable, one from 1877 to 1890, and the other from 1898 to the present time. The course of the graph thus indicates a rapid fall from 42.56 in 1860 to 34.99 in 1877, succeeded by a fluctuating but, on the whole, fairly stationary period to 34.98 in 1890, then a fall even more rapid to 27.15 in 1898, and a further comparatively stationary period to 27.21 in 1911. The lowest point reached, viz., 25.29, was attained in 1903, the year in which the Commonwealth suffered severely from the worst drought it has ever experienced.

Since then a small but well defined advance in the birth rate has been in evidence. A declining birth rate is usually due to complex causes, amongst which the variations in the age constitution of the population, and the adoption of preventative measures, are generally considered the most potent.

(iii.) *Deaths.* The three graphs relating to deaths furnish particulars concerning the rates experienced during the period amongst males and females separately, and in the population as a whole, the latter occupying naturally a position between the other two. Throughout the period the rate for males has largely exceeded that for females, but the fluctuations in the two rates have synchronised remarkably, indicating that the conditions which have been responsible for the marked variations which have occurred from time to time have affected males and females alike. On the whole, the graphs furnish clear evidence of a satisfactory decline in the death rate of the Commonwealth, a fall having taken place from 20.86 in 1860 to 10.66 in 1911. The graphical representation of the death rates brings into prominence five years in which the rates were exceptionally high when compared with those of adjacent years. These years are 1860, 1866, 1875, 1884, and 1898. The principal cause of the excessive rate of 1860 was the prevalence in that year of measles, scarlatina, and diphtheria, while the high rate of 1866, 1875, and 1898 were also largely due to epidemics of measles. Prior to 1892, when a rate of 12.91 was experienced, the lowest general death rate for the Commonwealth was that of 1871, viz., 13.24. The highest male death rate for the period was 20.97 in 1860, and the lowest 11.51 in 1909. For females the highest was 20.71 in 1860, and the lowest 9.06 in 1909. The difference between the male and female rate has, since 1869, been fairly constant, and has ranged between 1.97 and 3.44, with a mean value of about 2.7.

(iv.) *Marriages.* In the case of the graph representing marriage rates, the fluctuations are less abrupt than in the case of the birth rate and death rate graphs, and the rate for 1911, the final year of the period, viz., 8.79, does not differ very considerably from that of 1860, which was 8.42. The lowest marriage rate for the period was that of 1894, viz., 6.08, marking the culmination of the commercial and financial depression indicated by the declining rates from 1888 onwards. From 1894 to the present time a satisfactory increase has been in evidence, disturbed only by the sharp decline which, in 1903, accompanied the severe drought experienced in the Commonwealth in that year.

(v.) *Natural Increase.* This graph, which represents the excess of births over deaths per 1000 of population, exhibits marked fluctuations arising from the combined fluctuations in birth and death rates. Thus, corresponding to the high death rates of 1860, 1866, 1875, and 1898, there are exceptionally low rates of natural increase, accentuated in the last-mentioned year by a comparatively low birth rate. A combination of low birth rate and comparatively high death rate was also responsible for a very low rate of natural increase in 1903. The highest rate of natural increase for the period was 26.58 in 1864, and the lowest 13.03 in 1898.

6. Graphs of Annual Birth Rates—States (pages 253 and 254).—These graphs furnish for the several States information similar to that supplied in the graph on page 252 for the Commonwealth as a whole. It will be seen that in every case the total effect has been an extensive decline in rate, subject to very marked fluctuations. In all the States the period from 1875 to 1885 was one of arrested decline, if not of actual advance, in the birth rate. With the exception of the very low rate accompanying the drought in 1903, the variations in any of the States since 1901 have not been very marked, and in some cases a slight tendency to increase is in evidence.

The highest birth rates during the period were as follows:—New South Wales (1864), 44.00; Victoria (1862), 44.71; Queensland (1860), 47.93; South Australia (1862),

45.44 ; Western Australia (1860), 38.96 ; and Tasmania (1884), 36.63. The following were the lowest rates for the period :—New South Wales (1903), 25.44 ; Victoria (1910), 24.51 ; Queensland (1903), 24.53 ; South Australia (1903), 23.84 ; Western Australia (1896), 23.44 ; Tasmania (1899), 27.43.

7. Graphs of Annual Death Rates—States (pages 255 and 256).—These graphs furnish for the several States similar information to that given for the Commonwealth as a whole in the diagram on page 252, and indicate in each case a satisfactory decline in death rate. It may be noted that an exceptionally high death rate was experienced in all the States in 1875, and that a similar uniformity, though on a smaller scale, is observable for the year 1898, the principal cause in each case having been an epidemic of measles. The highest death rates experienced during the period were as follows :—New South Wales (1867), 19.79 ; Victoria (1860), 22.77 ; Queensland (1866), 25.96 ; South Australia (1875), 19.97 ; Western Australia (1884), 21.54 ; and Tasmania (1875), 19.99. The following were the lowest death rates for the period :—New South Wales (1909 and 1910), 9.89 ; Victoria (1909 and 1911), 11.45 ; Queensland (1906), 9.50 ; South Australia (1909), 9.74 ; Western Australia (1910), 10.11 ; and Tasmania (1909), 9.68.

SECTION VI.

LAND TENURE AND SETTLEMENT.

§ 1. Introduction and Early History.

1. **Introduction.**—A comprehensive description, in a classified form, of the land tenure systems of the several States has been given in preceding issues of this book; see especially Year Book No. 4 (pp. 235 to 333). The details of that description have been necessarily condensed in the present issue, and for more complete information for past years, reference may therefore be made to Year Book No. 4. The historical matter dealing with the development of land legislation in the individual States may be found in Year Book No. 2 (pp. 263 to 272), and in a more condensed form in Year Books No. 3 (pp. 245 to 254), and No. 4 (pp. 235 to 244).

§ 2. Land Legislation in Individual States.

1. **New South Wales.**—(i.) *Acts now in Force.* The Crown Lands Act of 1884 and the supplementary Act of 1889 were passed chiefly for the purpose of putting an end to speculative selection without *bonâ fide* intention of settlement. Pastoral leases were required to be surrendered to the Crown and divided into two equal parts, one of which was returned to the lessee under a lease with a fixity of tenure for a term of years, the other half the lessee was allowed to hold under an annual occupation license, but this half was always open for selection.

Nevertheless accumulation of land into large estates continued, and settlement proceeded slowly. Entirely new principles of agrarian legislation have been embodied in the Crown Lands Acts 1895 to 1912, the Labour Settlements Act 1902, the Closer Settlement Acts 1904 to 1909, and the Closer Settlement Promotion Act 1910, which offer *bonâ fide* settlers special inducements by the introduction of new forms of tenure on easy terms and conditions.

(ii.) *The Western Lands Acts.* All Crown lands in the Western Division of New South Wales are now subject to the special provisions of the Western Lands Acts 1901 and 1905. All leases or occupation licenses could be brought within the provisions of the Western Lands Act by application before the 30th June, 1902. Otherwise the leases or licenses were dealt with by the Board as if the Act had not been passed. All leases issued or brought under the provisions of the Western Lands Acts expire on the 30th June, 1943, except in cases where part of the land leased is withdrawn for the purpose of sale by auction, or to provide small holdings, in which case an extension of the term of lease of the remainder may be granted as compensation for the part withdrawn.

2. **Victoria.**—(i.) *Acts now in Force.* The Consolidating Land Act of 1901, amended by the Acts of 1903, 1904, 1905, 1909, and 1910, deals with the whole system of land occupation and alienation in this State. Closer Settlement was provided for by the Land Acts of 1898 and 1901, and amendments until the introduction of the Closer Settlement Act 1904, amended in 1906, 1907, 1909, 1910, and 1911. Other special forms of tenure have been provided for by the Settlement on Lands Act 1893, and the Small Improved Holdings Act 1906; these, however, are now embraced in the Land Acts and Closer Settlement Acts respectively.

The Land Act 1910 allows large tracts of land in the counties of Millewa, Croajingolong, and Dargo hitherto reserved for public purposes to be dealt with as unalienated Crown Lands. It is proposed to pass an amending and consolidating Land Act at an early date.

(ii.) *Mallee Lands.* The lands in the Mallee territory comprising an area of about 11,000,000 acres in the north-western district of the State can be cleared at a moderate expenditure. An extension of railway facilities and of successful systems of water supply should bring this territory into greater prominence as a field for agricultural enterprise. More than one-half of this area is unalienated and available for occupation.

Alienation of Mallee lands is now dealt with by a special part of the Land Act of 1901 (see § 6, 3, iii.), as amended in 1904, by the Murray Settlements Act 1907, and by the Land Act 1911.

3. *Queensland.—Acts now in Force.* The Closer Settlement Act 1906 and the Land Act 1910 control the alienation of Crown lands in this State. The latter Act consolidates, amends and simplifies the law relating to the occupation and alienation of Crown lands.

4. *South Australia.—Acts now in Force.* The Crown Lands Act 1903, amended in 1905, 1906, 1909, 1910 and 1911, repealed and consolidated previous Land Acts, and also repealed the earlier Closer Settlement and Village Settlement Acts. Acts amending the provisions relating to Closer Settlement were passed in 1910 and 1911. The Pastoral Act 1904 controls the pastoral occupation of lands, and the Irrigation and Reclaimed Lands Acts of 1908, 1909, and 1910 provide for leases of reclaimed and irrigable lands.

5. *Western Australia.—Acts now in Force.* The Land Act 1898 which consolidated previous legislation as to the management of Crown Lands has in turn been amended at various times, and, with such amendments, is now in force. The principle of repurchasing Crown lands for the purpose of Closer Settlement was introduced by the Agricultural Lands Purchase Acts 1896 to 1904; these Acts were repealed and consolidated by the Agricultural Lands Purchase Act 1909.

6. *Tasmania.—Acts now in Force.* The law relating to land tenure and settlement is now consolidated in the Crown Lands Act 1911; and in Closer Settlement Acts 1906, 1907, 1908, and 1911.

7. *Northern Territory.*—Prior to the transfer of the Northern Territory to the Commonwealth on the 1st January, 1911, the sale and occupation of lands in the Territory were regulated by the Northern Territory Crown Lands Act 1890, the Northern Territory Land Act 1899, and the Northern Territory Tropical Products Act 1904, but from that date the further alienation and occupation of land in the Territory were suspended, pending a complete reorganisation of the system of land settlement by the Commonwealth Government. In December, 1912, an ordinance, cited as the Crown Lands Ordinance 1912, dealing with this question, was made, by which the conditions of land tenure and settlement in the Territory are now determined. Under this ordinance no further alienation of Crown lands is permitted, unless such alienation is in pursuance of existing agreements.

8. *Administration and Classification of Crown Lands.*—In each of the States of the Commonwealth there is now a Lands Department under the direction of a responsible Cabinet Minister, who is charged generally with the administration of the Acts relating to the alienation, occupation, and management of Crown Lands. The administrative functions of most of the Lands Departments are to some extent decentralised by the division of the States into what are usually termed Land Districts, in each of which there is a Lands Office, under the management of a land officer, who deals with applications for selections and other matters generally appertaining to the administration of the Acts within the particular district. In some of the States there is also a Local Land Board or a Commissioner for each district or group of districts. In the Northern Territory the administration of the regulations relating to the occupation and management of Crown Lands is in the hands of a Classification Board, consisting of the Director of Lands, the Director of Agriculture, and the Chief Surveyor.

In most of the States, Crown lands are classified according to their situation, the suitability of the soil for particular purposes, and the prevailing climatic and other conditions. The modes of tenure under the Acts, as well as the amount of purchase money

or rent and the conditions as to improvements and residence, may vary in each State according to the classification of the land. The administration of certain special Acts relating to Crown lands has in some cases been placed in the hands of a Board under the general supervision of the Minister; for such purpose, for instance, are constituted the Western Lands Board in New South Wales, the Lands Purchase and Management Board in Victoria, and the Closer Settlement Board in Tasmania.

In each of the States and in the Northern Territory there is also a Mines Department, which is empowered under the several Acts relating to mining to grant leases and licenses of Crown lands for mining and auxiliary purposes. Such leases and licenses are more particularly referred to in a later part of this section. (See § 9.)

Full information respecting lands available for settlement or on any matter connected with the selection of holdings may be obtained from the Commonwealth representative in London, from the Lands Departments, or from the Agents-General of the respective States. The administration and classification of Crown lands in each State were more fully dealt with in Year Book No. 2 (pp. 273-6).

§ 3. Tenures under which Crown Lands may be Alienated or Occupied.

1. Introduction.—The freehold of Crown lands in the several States of the Commonwealth may now ordinarily be alienated either by free grant (in trust for certain specified purposes), by direct sale and purchase (which may be either by agreement or at auction), or by conditional sale and purchase. Crown lands may be occupied in the several States under a variety of forms of leases and licenses, issued both by the Lands and the Mines Departments.

2. Classification of Tenures.—The tabular statement given on pages 268 and 269 shews the several tenures under which Crown lands may be acquired or occupied in each State of the Commonwealth. The forms of tenure are dealt with individually in succeeding parts of this section. In the State of Victoria it is proposed to amend and consolidate the Land Acts at an early date, and to abolish some of the existing forms of tenure. Reference to any amending Acts which are passed up to the latest available date prior to the publication of this book may be found in the Appendix.

(i.) *Free Grants, Reservations, and Dedications.* The modes of alienation given in this category include all free grants either of the fee simple or of leases of Crown lands. "Free" homesteads in Queensland and Western Australia are not included in this class, these tenures being free in the sense that no purchase-money is payable, but not free from residential and improvement conditions. Reservation and dedication, which are ordinarily conditions precedent to the issue of free grants, are also dealt with therein.

(ii.) *Sales by Auction and Special Sales.* This class of tenure includes all methods by which the freehold of Crown lands may be obtained (exclusive of sales under the Closer Settlement and kindred Acts) for cash or by deferred payments, and in which the only condition for the issue of the grant is the payment of the purchase-money.

(iii.) *Conditional Purchases.* In this class are included all tenures (except tenures under Closer Settlement and kindred Acts) in which the issue of the grant is governed by the fulfilment of certain conditions (as to residence or improvements) other than, or in addition to, that of the payment of purchase money.

(iv.) *Leases and Licenses.* This class includes all forms of occupation of Crown lands (other than under Closer Settlement and kindred Acts) for a term of years under leases and licenses issued by the Lands Departments. As the terms indicate, the freehold cannot be obtained under these forms of tenure.

(v.) *Closer Settlement Sales, Leases, and Licenses.*—In this division are included all forms of tenure provided for under the various Closer Settlement Acts and also under kindred Acts, such as the Village Settlements and Small Holdings Acts.

(vi.) *Mines Departments' Leases and Licenses.* The tenures specified include all methods in which Crown lands may be occupied for mining and auxiliary purposes under leases and licenses issued by the Mines Departments in the several States.

CLASSIFICATION OF TENURES UNDER WHICH CROWN LANDS MAY BE ALIENATED OR OCCUPIED.

New South Wales.	Victoria.	Queensland.
FREE GRANTS, RESERVATIONS, AND DEDICATIONS.		
Free grants in trust Volunteer land grants Reservations and dedications under Land Act 1884 and Mining Act 1906	Free grants in trust and re- servations under Land Act 1901	Free grants in trust Reservations under Land Act 1897 and under State Forests and National Parks Act 1906
SALES BY AUCTION AND SPECIAL SALES.		
Auction sales for cash or on credit After-auction sales Special sales Improvement purchases	Auction sales for cash or on credit Special sales	Auction sales for cash or on credit After-auction sales Special sales Unconditional selections
CONDITIONAL PURCHASES.		
Residential or non-residential conditional purchases Conversion of conditional pur- chase leases Homestead selections	Agricultural allotments, resi- dential or non-residential Grazing allotments, resi- dential or non-residential Selection from grazing area, perpetual or auriferous leases Selection from pastoral leases Mallee agricultural licenses Murray settlements leases	Agricultural farms Agricultural homesteads Prickly pear selections Free homesteads
LEASES AND LICENSES.		
Conditional leases Conditional purchase leases Settlement leases Improvement leases Annual leases Residential leases Special leases Snow leases Pastoral leases Scrub leases Inferior lands leases Occupation licenses Western lands leases Homestead farms Suburban holdings Crown leases	Grazing area leases Perpetual leases Mallee leases Licenses of auriferous lands Leases of swamp or reclaimed lands Grazing licenses Leases and licenses for other than pastoral or agricultural purposes State forest and timber re- serve licenses	Grazing farms Grazing homesteads Occupation licenses Special leases Perpetual lease selections Special licenses Pastoral leases
CLOSER SETTLEMENT SALES, LEASES AND LICENSES.		
Sales by auction Closer settlement purchase Annual leases Labour settlements	Special sales Sales by auction Conditional purchase leases Holdings under small Im- proved Holdings Act 1906 Village communities	Sales by auction Agricultural farms Unconditional selections Settlements under Special Agri- cultural Selections Act 1910
MINES DEPARTMENTS, LEASES AND LICENSES.		
Miners' rights Business licenses Authorities to prospect Leases	Mining leases Special licenses Miners' rights Business & residence licenses	Miners' rights Mining leases and licenses Miners' homestead leases

3. Conversion of Tenures.—It may be seen in later parts of this section that in certain cases provision is made in the land Acts for the conversion of one form of tenure to another. In this connection an important Act was passed in New South Wales in 1908, viz., the Crown Lands Amendment Act 1908. A synopsis of the provisions of this

CLASSIFICATION OF TENURES UNDER WHICH CROWN LANDS MAY BE ALIENATED OR OCCUPIED.

South Australia.	Western Australia.	Tasmania.
FREE GRANTS, RESERVATIONS, AND DEDICATIONS.		
Free grants in trust Reservations and dedications under Crown Lands Act 1903 Artesian leases	Free grants in trust and free leases Reservations under Land Acts 1898 and 1906	Free leases Reservations under Crown Lands Act 1911
SALES BY AUCTION AND SPECIAL SALES.		
Auction sales for cash After-auction sales Sales for special purposes	Auction sales for cash	Auction sales for cash or on credit After-auction sales Special sales of residence or business allotments
CONDITIONAL PURCHASES.		
Agreements to purchase Special agreements under Pin- naroo Railway Act	Conditional purchase, resi- dential or non-residential Conditional purchase by direct payment Conditional purchase of small blocks Free homestead farms Conditional auction sales	Selection of rural lands Homestead areas Selection in mining areas Conditional auction sales
LEASES AND LICENSES.		
Perpetual leases Miscellaneous leases Grazing and cultivation leases Reclaimed swamp leases Special licenses Pastoral leases Leases with right of purchase	Pastoral leases Timber licenses Special leases Quarrying licenses	Grazing leases Miscellaneous leases Timber licenses Occupation licenses
CLOSER SETTLEMENT SALES, LEASES, AND LICENSES.		
Sales by auction Agreements to purchase Miscellaneous leases Irrigation area leases Village settlements Homestead blocks	Sales by auction Conditional purchases Workingmen's blocks	Special sales Leases with right of purchase
MINES DEPARTMENTS' LEASES AND LICENSES.		
Miners' rights Mining leases Miscellaneous leases Business claims Occupation licenses	Miners' rights Mining leases Miners' homestead leases	Prospectors' licenses Miners' rights Mining leases Miscellaneous licenses

NOTE.—*Northern Territory.*—By the Crown Lands Ordinance of 1912, the only forms of tenure under which land may be held in the Northern Territory, exclusive of land held under pre-existing rights, is that of leasehold. The different forms of lease and license under which land may be taken up in the Territory may be found in § 7 of this section.

Act may be found in Year Book No. 5, (p.p. 266-267). In 1910, the Queensland Government passed an Act (The Land Act 1910) also dealing with the conversion of selection tenures.

4. **Limitation of Tenures in New South Wales.**—In October, 1910, it was officially stated that it was the policy of the Government to discontinue the granting of the freehold of Crown Lands. Under the Crown Lands Act 1912 this policy was given effect to by the discontinuance of the disposal of Crown Lands by conditional purchase or as homestead selections, and by the institution of several new forms of tenure, viz., homestead farms, suburban holdings, and Crown leases.

The first two are leases in perpetuity, while the term of a Crown lease is 45 years.

5. **Tenure of Lands by Aliens.**—In the States of New South Wales, Queensland, South Australia and Tasmania restrictions are imposed upon the tenure of lands by aliens (*i.e.*, persons other than natural-born or naturalised British subjects). In Victoria and Western Australia there are no such restrictions.

(i.) *New South Wales.* Under the Crown Lands Act 1895 (sections 40 and 41), an alien is not qualified to apply for a homestead selection, conditional purchase lease, settlement lease, original homestead lease, or original conditional purchase, unless he has resided in New South Wales for one year, and at the time of making application he lodge a declaration of his intention to become naturalised within five years. If he fail to become naturalised within that period, the land is forfeited.

Under the Crown Lands Act 1912 (section 32) any alien who shall become the holder of a homestead farm, a suburban holding, or Crown Lease, or a lease within an irrigation area shall become naturalised within three years after his becoming such holder. Failure to comply with this regulation involves forfeiture of such holding, together with all improvements thereon.

It is proposed to pass a regulation at an early date giving priority to applicants in ballots for land in the following order.—(a) Members of any of the European races. (b) Persons who are not members of any European race. (c) Coloured people who are aliens.

(ii.) *Victoria.* Under the Aliens Act 1890 (section 3), every alien friend resident in Victoria may acquire, either by grant from the Crown or otherwise, both real and personal property.

(iii.) *Queensland.* Under the Land Act 1891 (section 85.2 and 86B), an alien cannot acquire the freehold of any land in Queensland unless he obtains a certificate that he is able to read and write from dictation, words in such language as the Minister for Lands may direct. He must within three years of such acquisition become a naturalised subject. In the Land Bill recently introduced in Parliament these provisions are proposed to be re-enacted, save that the time within which an alien must be naturalised is extended to five years.

(iv.) *South Australia.* In South Australia, Asiatics are disqualified from holding perpetual leases of lands in irrigation areas under Section 18 of the Irrigation and Reclaimed Lands Act 1908.

(v.) *Western Australia.* In this State aliens are under no disability as regards the acquisition of the freehold of lands already alienated. Every application to acquire Crown lands, whether by a British subject or an alien, is subject to the approval of the Minister for Lands, with an appeal to the Governor-in-Council.

(vi.) *Tasmania.* Under the Aliens Act 1861 (section 2), aliens cannot hold real estate. An alien, if the subject of a friendly State, may, however, occupy lands for any term not exceeding twenty-one years.

(vii.) *Northern Territory.* No restrictions are imposed upon the tenure of lands by aliens, excepting that under the Mining Act 1903, Asiatic aliens are disqualified from holding gold or mineral leases.

§ 4. Free Grants, Reservations, and Dedications.

1. **Introduction.**—Although free grants of Crown lands were virtually abolished as far back as 1831, the Land Acts, of all the States now contain provisions under which the free alienation or occupation of Crown lands for certain specified purposes—comprising generally charitable, educational, and public purposes—is allowed. In all the States, also, Crown lands may be excepted from sale and reserved to the Crown or dedicated for various public and special purposes. Generally reservation and dedication are conditions precedent to the issue of a free grant. In addition to reservations of a permanent nature, temporary reservations are also made, but these are, as a rule, subject to considerable fluctuations in area by reason of withdrawals, renotifications, and fresh reservations.

The following table shews the area for which free grants were issued and the areas permanently reserved or dedicated in each State during 1901, and from 1907 to 1911 inclusive:—

PARTICULARS OF FREE GRANTS, RESERVATIONS, AND DEDICATIONS, 1901 to 1911.

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
FREE GRANTS.							
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901 ...	282	7	425	5	156	10†	885
1907	305	861	943	200	132	6,715†	9,156
1908	1,575	169	463	38	265	110†	2,540
1909	1,334	165	281	28	299	270†	2,377
1910	2,039	103	186	300	280	288†	3,196
1911 ...	2,186	38,830	287	211	309	109†	41,932
RESERVATIONS AND DEDICATIONS.							
1901 ...	1,595	19,278	811,200	†	189,856	4,231	1,026,160§
1907 ...	1,509	1,770	487,766	47,831	406,116	8,113	953,105
1908 ...	1,425	65,883	1,371,259	13,117	664,634	1,302	2,117,620
1909 ...	1,967	34,504	498,515	270,523†	394,266	997,213	2,196,988
1910 ...	437	1,575	122,272	6,587	1,985,807	24,825	2,141,503
1911 ...	2,195	34,080	200,062	14,179	4,603,748	16,949	4,871,213

* Including both permanent and temporary reservations and dedications. † Free leases.

‡ Not available. § Exclusive of South Australia. || Including Northern Territory.

2. **New South Wales.**—Under Sections 104 to 106 of the Crown Lands Act 1884, Crown lands may be reserved or dedicated for certain charitable, educational, and public purposes therein specified. No fresh promises of dedication for religious purposes were made after the 11th May, 1880, on which date a resolution against any further such grants was passed by the Legislative Assembly. During 1911-12, 18 free grants comprising a total area of 848 acres were issued under the Volunteer Force Regulations Act 1867.

(i.) *Reservations.* In addition to the reservations under Sections 104 to 106 of the Act of 1884, referred to above, Crown lands may also be temporarily reserved as sites for cities, towns, or villages under Section 101 of the same Act, and may be reserved for mining purposes under Section 106 of the Mining Act 1906. Crown lands within one mile of any made or projected railway may be temporarily reserved from sale under Section 103 of the Crown Lands Act 1884, and under Sections 112 to 114 of that Act any Crown lands may be reserved from sale for the preservation and growth of timber. Further, under Section 39 of the Crown Lands Act 1889, Crown lands may be reserved by notification in the *Gazette* from being sold or let upon lease or license, in such particular manner as may be specified, or may be reserved from sale or lease generally.

(ii.) *Areas Granted and Reserved, 1911-12.* During the financial year 1911-12, the total area for which free grants were prepared was 3805 acres, including grants of 2841 acres of land resumed under the 12th clause of the Public Roads Act 1902. During the same period 1915 acres were dedicated and permanently reserved, the number of separate dedications being 178.

On the 30th June, 1912, the total area temporarily reserved was 26,340,466 acres, of which 6,261,127 acres were for travelling stock, 6,488,520 acres for forest reserves, 2,940,278 acres for water, 1,227,384 acres for mining, and the remainder for temporary commons, railways, recreation and parks, and miscellaneous purposes.

3. **Victoria.**—Under Section 10 of the Land Act 1901, the Governor is authorised to reserve Crown lands, either temporarily or permanently, from sale, lease or license, for any public purpose whatever.

During the year 1911 twenty-five free grants, comprising an area of 38,830 acres, were issued. The greater portion of this area, comprising 32,650 acres, was granted to the Metropolitan Board of Works in connection with the O'Shannassy Water Scheme. During the same year reservations of both a permanent and temporary nature, comprising an area of 34,080 acres, were made; of this area 373 acres were reserved for recreation grounds.

4. **Queensland.**—Under the Land Act 1910, the Governor-in-Council may grant in trust, or reserve from sale, or lease, temporarily or permanently, any Crown lands, required for public purposes.

(i.) *Reservations.* Under Section 2 of the State Forests and National Parks Act 1906, the Governor-in-Council may permanently reserve any Crown lands and declare them to be a State Forest or a National Park.

(ii.) *Areas Granted and Reserved, 1911.* During the year 1911 there were sixty free grants issued for a total area of 287 acres. During the same period reserves covering an area of 200,062 acres were proclaimed, of which 155,864 acres were for timber reserves, and 44,198 acres for camping, water, and other purposes. The total area reserved up to the end of the year 1911 was 13,355,377 acres.

5. **South Australia.**—Under Section 7 (d) of the Crown Lands Act 1903, the Governor is empowered to dedicate by proclamation any Crown lands for various charitable, educational and public purposes, and may, at any time after dedication, grant the fee simple of such lands to secure the use thereof for the purpose for which they were dedicated.

(i.) *Reservations.* Under Section 7 (f) of the same Act the Governor may by proclamation reserve any Crown lands (a) for the use of aborigines, (b) for the purposes of military defence, (c) for forest or travelling stock reserves, (d) for public recreation grounds, (e) for railways or tramways, and (f) for park lands.

(ii.) *Artesian Leases.* Under special circumstances free leases of pastoral lands may be granted to discoverers of artesian wells. (See § 8, 5 vi. c.)

(iii.) *Areas Granted and Reserved, 1911.* During the year 1911 there were 14 free grants issued for a total area of 211 acres. During the same year 106 reserves, comprising 14,179 acres, were proclaimed.

6. **Western Australia.**—Under Section 39 of the Land Act 1898, as amended by Section 27 of the Act of 1906, the Governor may reserve any Crown lands which may be required for religious, charitable, or public purposes. These reservations may be either temporary or permanent.

During the year 1911, 15 free grants totalling 309 acres were issued, while the area reserved was 4,603,748 acres. Further particulars are not available.

7. **Tasmania.**—Under Section 11 of the Crown Lands Act 1911, the Governor may reserve any Crown lands for the purposes therein specified. The lands are ordinarily leased for a period of ninety-nine years at a peppercorn rental.

During the year 1911 there were 17 free leases, comprising an area of 109 acres issued. During the same period 16,949 acres were reserved, 14,000 acres being reserved for water catchment, 2,700 acres for re-afforestation purposes, 41 acres for recreation grounds, and 208 acres for other public reserves. The total area permanently reserved to the end of the year 1911 was 1,058,531 acres.

§ 5. Sales by Auction and Special Sales.

1. Introduction.—In all the States sales by auction of Crown lands are held from time to time. Notifications of such sales are given in the *Government Gazettes*, together with particulars as to the upset price and conditions of sale. Excepting in the case of South Australia, where land is sold at auction for cash only, the purchase may be either for cash or on credit by deferred payments. In most of the States land may also be purchased by private contract at the upset price, when it has been offered at auction and not sold. In the case of auction sales on credit in the States of Western Australia and Tasmania, certain improvement conditions are imposed, and such sales are therefore classed for the purposes of this article among *Conditional Purchases*. (See § 6.) In most of the States comparatively small areas of Crown lands may be sold without competition under special circumstances. Sales by auction and special sales under *Closer Settlement Acts* are referred to in a later part of this section. (See § 8.)

2. New South Wales.—Under the Crown Lands Act 1884 lands not exceeding in the aggregate 200,000 acres for the whole State may be sold by auction during any one year. The sales are notified in the *Gazette* not less than one month before the day of sale. The upset prices may not be less than £8 an acre for town lands; £2 10s. for suburban lands; and other lands fifteen shillings. Town lands may not be sold in areas exceeding half-an-acre; suburban lands in areas exceeding twenty acres; and country lands in areas exceeding 640 acres. A deposit of 25 per cent. on the purchase money must be paid at the sale, and the remainder within three months.

A fuller description of the conditions under which land may be purchased at auction may be found in the previous issues of the Year Book. (See Year Book No. 5, p. 273.)

Alienation by Auction and Special Sales. During the year ended the 30th June, 1912, the area of Crown lands sold by auction and special sales for which grants were prepared amounted to 9517 acres, of which 3886 acres were sold by auction in 1246 lots; 3304 acres were sold by after-auction sales in 1074 lots; 54 acres were sold as improvement purchases in 118 lots; and 2273 acres were sold as special purchases in 285 lots. The following table gives particulars of Crown lands alienated by auction and special sales during 1901 and for each year from 1907 to 1912 :—

NEW SOUTH WALES.—AUCTION AND SPECIAL SALES, 1901 and 1907-1912.

Year.	Auction and After-auction Sales.	Improvement Purchases.	Special Sales.	Total.	
				Area.	Price.
	Acres.	Acres.	Acres.	Acres.	£
1901 ¹ ...	49,074	43	445	49,562	116,562
1907 ...	25,327 ²	57	1,131	26,515	132,127
1908 ...	13,995 ²	34	712	14,741	94,928
1909 ...	11,745 ²	48	1,229	13,022	98,763
1910 ...	7,980 ³	86	1,109	9,175	91,374
1911 ...	6,732 ⁴	47	1,348	8,127	86,601
1912 ...	4,530 ⁵	32	2,063	6,625	77,274

1. Year ended 31st December. Subsequent years to 30th June. 2. Including land sold under the Centennial Park Sale Act. 3. Exclusive of 3,423 feet frontage sold for £15,005 under the Centennial Park Sale Act. 4. Exclusive of 2,347 feet frontage sold for £9,175 under Centennial Park Sale Act. 5. Exclusive of 1882 feet frontage sold for £7,554 under Centennial Park Sale Act.

The total areas alienated by auction and other forms of sale up to the 30th June, 1912, are shewn hereinafter. (See § 11.)

3. **Victoria.**—Lands specially classed for sale by auction, and any land in any city, town, or borough, may be sold by auction in fee simple, not exceeding 100,000 acres in any one year, at an upset price of £1 an acre, or at any higher price determined. The purchaser must pay the survey charge at the time of the sale, together with a deposit of 12½ per cent. of the whole price; the residue is payable in equal half-yearly instalments not exceeding forty in number, according to the amount, with interest at the rate of 4 per cent. per annum.

(i.) *Special Sales without Competition.* Detached strips of land not exceeding twenty acres may be sold at a valuation to the owner of the adjoining freehold in cases somewhat similar to those specified above in respect to Crown lands in New South Wales.

(ii.) *Areas Sold at Auction and by Special Sales.* The following table gives particulars of auction sales and special sales for the year 1901 and from 1907 to 1911:—

VICTORIA.—AUCTION AND SPECIAL SALES, 1901 and 1907-1911.

Particulars.	1901.	1907.	1908.	1909.	1910.	1911.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Country lands	4,079	2,776	2,805	2,729	2,469	1,096
Town and suburban lands	2,127	1,369	1,630	2,062	1,789	1,263
Special sales	846	2,168	2,117	2,602	1,537	1,709
Total... ..	7,052	6,313	6,552	7,393	5,795	4,068

Particulars of total areas alienated are given hereafter. (See § 11.)

4. **Queensland.**—The Minister may, with the approval of the Governor-in-Council, cause any Crown lands to be offered for sale by auction. The notification must specify the amount of deposit, and the term for payment of the balance of the money, which term may not exceed ten years. The upset price may not be less than £8 per acre for town lands, £2 per acre for suburban lands, and 10s. per acre for country lands.

(i.) *After-auction Sales.* The proclamation of lands for sale by auction declares that any lands therein mentioned, which have been offered at auction, but not sold or withdrawn, shall be open to purchase at the upset price by the first applicant. The price may be paid in the same instalments and at the same periods as if the land had been bought at the auction.

(ii.) *Special Sales without Competition.* Land may be sold without competition to the holder or holders of adjoining lands at a price to be determined by the Land Court, under circumstances similar to those specified above in the case of New South Wales. When the holder of any land proves that, owing to danger from floods or other reasons, it is unsafe to reside on his holding, he may be granted, on payment of a price determined by the Land Court, an area not exceeding ten acres out of the nearest convenient and available Crown lands.

(iii.) *Areas Sold at Auction, after Auction, and by Special Sales.* The following table shews the areas sold at or after auction, and by special sales, during the year 1901 and from 1907 to 1911:—

QUEENSLAND.—AUCTION AND SPECIAL SALES, 1901 and 1907-1911.

Particulars.	1901.	1907.	1908.	1909.	1910.	1911.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Town	334	285	472	227	464	764
Suburban	793	364	621	340	1,175	1,462
Country—						
Ordinary sales	52,132	11,556	7,585	12,844	8,939	7,897
Special sales .....	...	3,716	...	...	...	...
Total	53,259	15,921	8,678	13,411	10,578	10,123

Particulars as to the total areas alienated by all forms of purchase up to the end of each year from 1901 to 1911 are given in a later part of this section. (See § 11.)

(iv.) *Unconditional Selections.* This form of tenure is similar to that of a sale by auction with deferred payment. The minimum price for the land is 13s. 4d. an acre, payable in twenty annual instalments, and the maximum area granted to the applicant is 1,280 acres. A deed of grant may be obtained upon payment of the purchase money.

The following table shews the number and area of unconditional selections for which applications were accepted during the year 1901 and from 1907 to 1911:—

QUEENSLAND.—UNCONDITIONAL SELECTIONS, 1901 and 1907-1911.

Particulars.	1901.	1907.	1908.	1909.	1910.	1911.
Number	151	91	126	131	98	76
Area	Acres 24,322	25,382	22,770	27,395	15,930	12,968
Rent	£ 1,180	1,042	1,073	1,111	685	525

5. *South Australia.*—The following lands may be sold by auction for cash:—(a) Special blocks. Any single section of Crown lands which may be surrounded by lands sold or contracted to be sold, and any section (not exceeding 100 acres in area) which may be required for the establishment of any industry. (b) Crown lands which have been offered for perpetual lease, and not taken up for two years. (c) Town lands. (d) Suburban lands. The upset price is determined by the Commissioner, and 20 per cent. of the purchase-money must be deposited at the time of sale, and the residue paid within such a time as the Commissioner may allow.

(i.) *After-auction Sales.* All Crown lands, except town or suburban lands, offered at auction and not sold remain open for leasing or sale under agreement or may be sold by private contract for cash at the upset price.

(ii.) *Sales for Special Purposes.* The Governor may, on the application of the purchaser or lessee under any of the Crown Lands Acts, grant 2 acres of the land comprised in such agreement or lease to trustees, to be used for any public or charitable purposes, or he may grant not over one acre of land, comprised in such agreement, as a site for a shop, mill, or post office. The purchase-money for such land must be paid at the time of application.

(iii.) *Areas Sold for Cash.* The following table shews the areas sold for cash during the year 1901 and from 1907 to 1911. The total areas sold under all types of sale at the end of the year 1901 and from 1907 to 1911 are shewn in a later part of this section. (See § 11.)

SOUTH AUSTRALIA.—AUCTION AND SPECIAL SALES, 1901 and 1907-1911.

Year	1901.	1907.	1908.	1909.	1910.	1911.
Area in acres	11,314	70,349	78,557	128,529	386,977	470,008

6. Western Australia.—Surveyed town lots notified in the *Gazette* as open for sale, were sold by public auction at a prescribed upset price up to 18th October, 1911, since which date, however, all town lands have been withdrawn from sale and are now granted under lease only. In the case of suburban lands, the purchaser must carry out certain improvements, which are more particularly referred to below. (See § 6, *Conditional Purchases*, 6 vii.)

(i.) *Areas Sold by Auction.* The following table shews the areas of town and suburban lands sold at auction during the year 1901 and from 1907 to 1912 :—

WESTERN AUSTRALIA.—AUCTION SALES, 1901 and 1907-1912.

Year	1901.	1907. ¹	1908. ¹	1909. ¹	1910. ¹	1911. ¹	1912. ¹
Area sold ... Acres	856	1,895	2,258	2,160	1,643	1,848	1,359
Number of Allotments	1,366	995	1,090	879	783	778	705

1. For the year ended 30th June.

Particulars as to total areas alienated are given in a later part of this section. (See § 11.)

7. Tasmania.—Any town lands may be sold at auction or by private contract, either for cash or on credit, provided that no such lands may be sold on credit if the price is less than £15. Rural lands may also be sold at auction or by private contract, but lots of first-class land may not be sold on credit if less than fifteen acres in area. In the case of sales on credit both of town and rural lands, improvement conditions are imposed, and such sales are therefore classified for the purposes of this article as *Conditional Purchases*. (See § 6.)

(i.) *After-auction Sales.* All rural lands and town lands, not within five miles of any city, which have been offered at auction and not sold, may be purchased by private contract at the upset price, and subject to the conditions on which they were offered at auction.

(ii.) *Sale of Land in Mining Towns.* The holder of a residence or business license, who is in occupation and is the owner of buildings and improvements upon the area licensed of a value equal to the upset price of such area, is entitled to purchase not more than half an acre in area. The areas may be sold on credit.

(iii.) *Areas Sold for Cash.* The following table shews the areas sold for cash during the year 1901 and from 1907 to 1911 :—

TASMANIA.—AUCTION AND SPECIAL SALES, 1901 and 1907-1911.

Year	1901.	1907.	1908.	1909.	1910.	1911.
Area in acres	1,915	504	603	1,026	55	190

Particulars of total areas alienated are given in a later part of this section. (See § 11.)

§ 6. Conditional Purchases.

1. **Introduction.**—In all the States of the Commonwealth the freehold of the land may be acquired under what are known as systems of conditional purchase by deferred payments of half-yearly or yearly instalments. Certain conditions, generally as to residence and improvements, have to be complied with before the freehold is granted, but these conditions are usually of a light nature and are inserted chiefly with the object of guaranteeing that the occupier will become of benefit to the community by making a reasonable effort to render his holding wealth-producing. Though there is a considerable similarity between some of the forms of tenure in the several States, the terms and conditions vary greatly in detail. As a rule a lease or license for a certain period is first issued to the selector, and upon fulfilment of the prescribed conditions and payment of the full amount of purchase-money the freehold is conveyed to him. In Queensland and Western Australia "free" homesteads may be acquired. Although under these tenures no purchase-money is payable, the grant is conditional on the performance of residential and improvement conditions; these tenures are therefore included here with conditional purchases rather than with free grants.

2. **New South Wales.**—The following are the methods by which land may be alienated by conditional purchase:—(i.) Residential conditional purchase; (ii.) non-residential conditional purchase; (iii.) conversion of conditional purchase; and (iv.) homestead selections.

(i.) *Residential Conditional Purchase.* Any vacant Crown lands in the "Eastern Division" and "Central Division," and certain proclaimed areas in the "Western Division" are available for conditional purchase. An applicant must be not less than sixteen years of age, and must pay on application both the prescribed deposit and a survey fee according to a fixed scale. The area which may be selected depends upon the division in which the land is situated, and ranges from 40 to 2,560 acres. The price is ordinarily £1 per acre. After three years the purchaser may pay an instalment equal to 5 per cent. on the price of the land, and thereafter annually a similar amount. These instalments include $2\frac{1}{2}$ per cent. interest on the outstanding balance of the purchase money. The holding must be fenced within three years and improved to the value of ten shillings an acre (but not exceeding 50 per cent. of the price of the land) at the end of the first five years. Residential conditions, which for sufficient reason may be suspended, are imposed. A certificate which permits transference of the holding will be issued at the expiration of five years if the required conditions have been fulfilled.

The holder of a conditional purchase may obtain an additional conditional purchase the area of which, together with that of the original holding, must not exceed the prescribed maximum unless in the opinion of the Board such area is insufficient for the maintenance of a home.

(ii.) *Non-residential Conditional Purchase.*—The maximum area granted for a non-residential conditional purchase is 320 acres, and the minimum 40 acres. The price, deposit and annual instalments are double those required under residential conditions, and the improvement conditions are more stringent. A non-residential conditional purchase may be converted into an original conditional purchase.

(iii.) *Conversion of Conditional Purchase Leases.* Under the Crown Lands Amendment Act 1905, a conditional purchase lease, for which the term is forty years, carries with it a right of conversion into a conditional purchase at any time during its currency, and ultimately into a freehold. These leases are more particularly referred to below. (See § 7, *Leases and Licenses*.)

(iv.) *Applications Made and Confirmed and Deeds Issued.* During the year ended the 30th June, 1912, deeds of grant were prepared on the completion of conditional purchases for 671,564 acres, making the total number of conditional purchases in

existence at the end of the financial year 92,208 for a total area of 16,529,008 acres. The following table gives particulars of conditional purchases in 1901 and from 1907 to 1912:—

NEW SOUTH WALES.—CONDITIONAL PURCHASES, 1901 and 1907-1912.

Year.	Applications Made.		Applications Confirmed.		Areas for which Deeds have been issued.	
	Number.	Area.	Number.	Area.	During the Year. ²	To end of Year.
		Acres.		Acres.	Acres.	Acres.
1901	2,277	549,898	1,555	360,910	500,554	4,212,189
1907 ¹	3,723	685,795	2,639	443,679	1,261,660	10,264,221
1908 ¹	3,850	734,125	2,961	580,209	1,395,648	11,659,869
1909 ¹	4,541	1,105,307	3,325	803,354	1,188,297	12,848,166
1910 ¹	2,264	342,367	1,984	294,897	1,079,887	13,928,053
1911 ¹	1,602	221,537	1,613	227,520	632,738	15,614,086
1912 ¹	1,258	190,969	1,099	175,004	671,564	15,232,355

1. Year ended 30th June. 2. Exclusive of exchanges under the Crown Lands Act 1895.

Further particulars as to the total areas alienated and in process of alienation are given hereinafter. (See § 11.)

(v.) *Homestead Selection.* Under the Act of 1895 suitable land may be classified for homestead selection. Good agricultural lands are divided into blocks, with maximum area of 1280 acres, and suitable lands for business people within easy access to towns may be provided. Conditions as to area of blocks, capital value, etc., are published in the *Gazette*. After five years' continuous residence a grant will be issued; thereafter a residence for at least seven months in the year will be necessary. The rent for the first six years will be $1\frac{1}{4}$ per cent. of the capital value of the land, and thereafter $2\frac{1}{2}$ per cent. of the capital value. Should an area granted under this tenure be found to be insufficient for the maintenance of a home, it may be increased to a home maintenance area by additional homestead selection. It is not intended to make any new areas available for homestead selection, a new form of tenure, viz., homestead farms, having been substituted (see page 287.)

During the year ended 30th June, 1912, there were 484 original and 53 additional homestead selections applied for, comprising an area of 119,278 acres. During the same period the total number of applications confirmed was 466, comprising 94,641 acres, and 4701 homestead selections and grants, comprising an area of 1,518,703 acres, were in existence on the 30th June, 1912. Further particulars for previous years are given in a later part of this section. (See § 11.)

3. *Victoria.*—The freehold of agricultural and grazing lands may be acquired by conditional purchase under the following tenures:—(i.) Agricultural allotments and grazing allotments; (ii.) Agricultural and grazing allotments by selection from grazing area or perpetual leases; (iii.) Mallee agricultural licenses; (iv.) Murray settlements leases; and (v.) swamp or reclaimed lands purchase leases. Numbers (i.), (ii.) and (iii.) may be either on residential or on non-residential conditions. It is proposed to make various important alterations at an early date in the land laws of Victoria.

(i.) *Agricultural Allotments and Grazing Allotments.* An agricultural allotment is an area not exceeding 200 acres of first-class lands or 320 acres of second-class lands, and a grazing allotment is an area not exceeding 640 acres of third-class lands, which may for 20s., 15s., and 10s. an acre for the first, second and third class lands respectively, be paid for in twenty or forty years. An applicant must be over 18 years of age, and must not already be in possession of a selection under the Land Acts.

Agricultural allotments and grazing allotments may be granted under either (a) residential or (b) non-residential licenses.

(a) *Residential Licenses* are granted for six years at a fee, according to the valuation of the land, of not less than sixpence per acre per annum. The licensee may not

transfer, assign, or sublet this allotment. The licenses are granted subject to conditions as to residence, improvements, fencing, and destruction of vermin. During the term of license improvements equal in value to the minimum price of the land must be effected. Upon satisfying the Board that all conditions of the license have been fulfilled, the licensee is entitled after six years to obtain a grant upon payment of the balance of the purchase-money; or otherwise he may obtain a lease of the allotment for a term of fourteen years at the same rental as the fee paid under license. During the currency of the lease a grant in fee of the lands leased may be obtained upon payment of the difference between the amount actually paid and the purchasing price of the land.

Residential licenses are also granted, subject to the same covenants and conditions as stated above, but varied with regard to the term and to the amount of the fee and rent reserved, being double the term at half the yearly payment.

(b) *Non-residential Licenses* for both agricultural and grazing allotments may be issued on conditions similar to the above, with the exception that the term of the lease granted after the license period must be on the fourteen years basis only.

(ii.) *Agricultural and Grazing Allotments by Selection from Grazing Areas and Perpetual Leases or Auriferous Lands Licenses.* The lessee of a grazing area may select thereout, under residential conditions (see 3 (i.) above), and if the residence and improvement conditions necessary under an agricultural or grazing allotment license have already been complied with, the license may be antedated any period, not exceeding 6 years, upon payment of the difference in the rent for such period, and a grant may, therefore, be obtained immediately. The lessee of a grazing area may, if preferred, select thereout under non-residential conditions (see 3 (i.) (b) above). Grazing area leases are more particularly referred to below, under the heading of *Leases*. (See § 7, 3 i.) Either residential or non-residential, agricultural or grazing allotments may also be selected under certain circumstances out of areas held under perpetual leases (see § 7, 3, ii.) or auriferous lands licenses. (See § 7, 3 iv.)

(iii.) *Mallee Agricultural Licenses.* These licenses are issued for first, second, and third-class Mallee lands, the maximum areas being 640, 1000 and 1280 acres of first, second and third-class land respectively. The licenses are for six years, and are issued subject to similar conditions (both residential and non-residential) as agricultural allotments. (See above.)

(iv.) *Murray Settlements Leases.* Under the Murray Settlements Act 1907, any Crown lands within the Mallee country or Mallee border may be subdivided into either (a) *Homestead Allotments* near the river Murray, each containing an area of not more than fifty acres, or (b) *Mallee farm allotments*, situated more or less remotely from the homestead allotments, and each containing an area not exceeding 640, 1000, 1280, or 1600 acres of first, second, third, or fourth class land respectively. Payment of the value of a holding, with interest at not less than $4\frac{1}{2}$ per cent. per annum, must be made in sixty-three half-yearly instalments, and the prescribed improvements must be carried out. Part II. of the Act provides for the construction and maintenance of irrigation works and gives power to constitute irrigation areas. Two settlement areas have been laid out under the Act with due regard to irrigation conditions, viz., those at White Cliffs and Nyah, and at the former place a dry farm area has also been subdivided. At White Cliffs 6273 acres were subdivided as homestead allotments, and 50,345 acres as dry farm allotments, while at Nyah 1960 acres were subdivided as homestead allotments.

(v.) *Swamp or Reclaimed Lands Purchase Leases.* The special conditions attached to conditional purchase leases of swamp or reclaimed lands are referred to below. (See § 7, 3 v.)

(vi.) *Area Selected Conditionally and Area Sold.* The subjoined table gives particulars shewing the areas selected conditionally during the year 1901 and from 1907 to 1911. A large proportion of the areas shewn has reverted to the Crown in consequence of non-fulfilment of conditions.

VICTORIA.—AREAS PURCHASED CONDITIONALLY, 1901 and 1907 to 1911.

Particulars.	1901.	1907.	1908.	1909.	1910.	1911.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
With residence ...	466,155	151,865	184,942	214,999	210,331	172,599
Without residence ...	50,257	39,367	28,941	42,180	38,363	33,109
Total ...	516,412	191,232	213,883	257,179	248,694	205,708
No. of selectors ...	2,979	1,518	1,533	1,736	1,740	1,608

Particulars as to total areas alienated and in process of alienation are given in a later part of this section. (See § 11.)

4. **Queensland.** The several types of selection under which the freehold may be acquired by conditional purchase are as follows:—(i.) Agricultural farms; (ii.) agricultural homesteads; prickly pear selections; and (iv.) free homesteads.

Land is made available for selection by proclamation in the *Gazette*, specifying the modes in which the land may be selected, the area, rent, price and conditions.

The applicant must be over the age of sixteen years. Applications for selections must be made in the prescribed form and be lodged with the land agent for the district in which the land is situated, and must be accompanied by the prescribed deposit. In the case of a prickly pear selection the deposit must be the full amount of the survey fee, and in other cases, except free homesteads, a year's rent and one-fifth of the survey fee. In the case of a free homestead application the deposit consists of an application fee of £1 and one fifth of the survey fee. If the land is open for selection in two or more modes, alternatively, and there are simultaneous applications to select it under different modes, priority among such applications is given to an application for the land as an agricultural homestead, as against an application for it as an agricultural farm, and to an application for it as an agricultural farm as against an application for it as an unconditional selection. In the case of simultaneous applications for the same land as an agricultural farm, priority is secured by an applicant who undertakes to personally reside on the land during the first five years of the lease. Provision is made in the Land Act 1910 for the conversion of one form of selection into another.

(i.) *Agricultural Farms.* The more accessible lands are usually set apart for agricultural selection up to the maximum area of 2560 acres allowed to each selector of an agricultural farm. The term is twenty years, and the price ranges from ten shillings per acre upwards. The annual rent is one-fortieth of the purchasing price, and the payments are credited as part of the price. Conditions relating to residence and improvements must be fulfilled. A selector who obtains a certificate that he has carried out such requirements upon payment of the balance of the purchase money, receives a deed of grant in fee-simple.

During the year 1911, applications were accepted to select agricultural farms to the number of 2046 for 714,733 acres, an average area of 349 acres, at an average price of 20s. 10d. per acre. The number of selections and the total area selected were higher than the corresponding figures for the previous year by 313 and 86,511 acres, respectively. The average area is less by 13 acres, and the average price lower by 1s. 3d. per acre.

(ii.) *Agricultural Homesteads.* The maximum area for an agricultural homestead must not exceed 320 acres. Upon fulfilment of the prescribed improvement conditions, a lease may be issued for a period of ten years, during which time the lessee must reside upon the holding. The annual rent will be 3d. per acre, and the purchasing price 2s. 6d. per acre, of which the annual rents are considered to be instalments.

Particulars of agricultural homesteads are given in par. (iv.)

(iii.) *Prickly Pear Selections.* Under the Land Act, 1910, the maximum area held under a prickly pear selection tenure by any one person, may not exceed 2560 acres. The term of the lease is fifteen years. All prickly pear must be destroyed during a

prescribed period, and the lease may contain a residential condition. The rent for the first prescribed period is nominal, and the purchasing price is published in the notification of sale. Upon fulfilment of all conditions and payment of the remainder of the purchasing price, the lessee is entitled to a deed of grant in fee-simple.

In the case of prickly pear (bonus) selection, the freehold of the land and a bonus in addition are granted for the complete eradication of the pear.

Particulars of prickly pear selections are given in the following paragraph.

(iv.) *Number and Area of Conditional Purchases.* The following table shews the number and area of conditional purchases for which applications were accepted in 1901 and from 1907 to 1911 :—

QUEENSLAND.—CONDITIONAL PURCHASES (APPLICATIONS ACCEPTED),
1901 AND 1907 TO 1911.

Year.	Agricultural Farms.		Agricultural Homesteads.		Prickly Pear Selections.		Total.	
	Number.	Area.	Number.	Area.	Number.	Area.	Number.	Area.
		Acres.		Acres.		Acres.		Acres.
1901 ...	661	160,804	669	155,512	19	48,450	1,349	364,766
1907 ...	1,948	689,916	267	68,464	439	524,956	2,654	1,283,336
1908 ...	1,608	607,164	229	55,152	714	870,849	2,551	1,533,165
1909 ...	1,433	541,293	162	39,654	496	665,614	2,091	1,246,561
1910 ...	1,733	628,222	67	14,778	920	1,308,170	2,720	1,951,170
1911 ...	2,046	714,733	30	5,814	806	1,020,615	2,882	1,741,162

The average area of agricultural farms selected during the year 1911 was 349 acres at an average price of 20s. 10d. per acre; the average area of agricultural homesteads was 194 acres. The average price of the land selected as prickly pear selections during the year was 5s. 2½d. per acre.

Particulars as to total areas alienated and in process of alienation may be found hereinafter. (See § 11.)

(v.) *Free Homesteads.* The maximum area which may be selected in this manner is 160 acres. The term is five years, and during that period the selector must occupy the land by personally residing on it, and must enclose it with a fence or make improvements equal in value to that of a fence. During the year 1911 the number of acres of land opened for selection as free homesteads was 1595, and 14 applications, totalling 2217 acres, were accepted.

5. South Australia.—The types of conditional purchases under which land may be alienated in this State are as follows :—(i.) Agreement to purchase, and (ii.) Agreement under the Pinnaroo Railway Act 1903. A month's notice of lands open for application is given in the *Gazette*. Applicants must not be under 18 years of age. Preference is given to applicants who will reside on the land applied for. Interest at the rate of 5 per cent. is charged on arrears due under leases and agreements; if over two months in arrears the Commissioner may recover the same in court. The unimproved value of any land held under any tenure, except under pastoral lease, must not exceed £5000. Exceptions are made in cases where the land to be included in the lease or agreement is suitable only for pastoral purposes, and the carrying capacity of which, together with all other lands held by the lessee or purchaser under any tenure, does not exceed 5000 sheep; if the land is outside Goyder's line¹ the limitation may be increased to a carrying capacity of 10,000 sheep.

¹ Goyder's line is not exactly based on rainfall, but on the evidence of vegetation ("salt-bush" and "blue-bush," etc.), and marked the northern limit of what was thought to be fit land for agricultural pursuits. The vegetation which was supposed incapable of flourishing in regions of regular rainfall afforded the indications for locating the line.

(i.) *Agreement to Purchase.*—Applications must be made in writing to the Commissioner, and must be accompanied by a deposit equal to the first half-yearly instalment of the purchase-money of the land and improvements. The purchase-money and interest for the land and improvements must be paid at not less than the rate of 2 per cent. per annum by sixty equal half-yearly instalments payable in advance. If the conditions relating to fencing, vermin destruction, and in some cases to residence, be fulfilled the purchase may be completed after a term of six years on payment of all principal and interest due.

(ii.) *Pinnaroo Railway Lands.* Under the Pinnaroo Railway Act 1903 provision was made for opening up about 1,500,000 acres of good agricultural country in the vicinity of a line from Pinnaroo adjoining the Victorian border to Tailem Bend, a distance of eighty-seven miles. These lands are now offered on agreement with covenant to purchase or on perpetual lease under the Crown Lands Act 1903. The railway has been paid for from the proceeds of the land already selected. The conditions of purchase are similar to those stated in par (i.) above.

The total area held on 30th June, 1912, was 506,439 acres; of this area 16,660 acres are held on perpetual and right of purchase leases, allotted before the Pinnaroo Railway Act was passed.

(iii.) *Particulars of Conditional Purchases.* The subjoined table gives particulars of the areas alienated by conditional purchase, on fulfilment of the conditions, at the end of 1901 and from 1907 to 1911:—

**SOUTH AUSTRALIA.—AREAS ALIENATED UNDER AGREEMENTS TO PURCHASE,
1901 AND 1907 TO 1911.**

Year	...	...	...	1901.	1907.	1908.	1909.	1910.	1911.
Area in acres	...	...	...	57,460	57,890	68,977	128,656	160,668	153,594

Particulars as to the total areas alienated and in process of alienation are given in a later part of this section. (See § 11.)

6. *Western Australia.*—The various types of selections under which the freehold can be alienated by conditional purchase in this State are as follows:—(i.) Residential conditional purchase; (ii.) non-residential conditional purchase; (iii.) conditional purchase by direct payment; (iv.) conditional purchase of blocks for vineyards, orchards, or gardens; (v.) conditional purchase of grazing lands; and (vi.) free homestead farms.

A full description of the various conditions under which land may be held under this form of tenure may be found in the previous issues of the Year Book. (See Year Book No. 5, pp. 283 and 284.)

(i.) *Areas Alienated Absolutely under Forms of Conditional Purchase.* The following table shews the area of the selections for which grants were issued, the prescribed conditions having been fulfilled, during the year 1901 and from 1907 to 1912.

Particulars as to the total areas alienated absolutely, and in process of alienation, are given in a later part of this section. (See § 11.)

WESTERN AUSTRALIA.—AREAS SELECTED CONDITIONALLY FOR WHICH CROWN GRANTS WERE ISSUED, 1901 and 1907-12.

Particulars.	1901.	1907. ¹	1908. ¹	1909. ¹	1910. ¹	1911. ¹	1912. ¹
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Free homestead farms	147	12,765	16,122	18,482	35,334	93,444	83,686
Conditional purchases	5,234	38,116	138,812	61,272	64,957	92,986	97,286
Poison land leases ...	...	135,444	130,729	2,668	3,284	...	2,593
Village allotments ...	...	...	...	...	...	...	...
Total ...	5,381	186,325	285,663	82,422	103,575	186,430	183,565
Number of holdings	48	356	437	475	564	1,073	998

1. For financial year ended 30th June.

(ii.) *Area Conditionally Alienated.* The following table shews the areas conditionally alienated under various methods of selection during the year 1901 and from 1907 to 1912 :—

WESTERN AUSTRALIA.—AREAS CONDITIONALLY ALIENATED, 1901 and 1907-12.

Particulars.	1901.	1907.*	1908.*	1909.*	1910.*	1911.*	1912.*
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
<i>Conditional Purchase—</i>							
Deferred payments (with residence)	161,302	355,773	447,159	595,115	910,953	899,816	791,844
" (without residence)	46,498	284,953	199,584	265,561	475,860	574,805	391,397
Direct payments (without residence)	1,909	2,175	2,645	1,762	3,641	2,458	5,661
<i>Village Allotments</i>							
Free Homestead Farms	63,623	109,090	189,086	257,528	238,102	201,172	203,791
Under the Agric. Lands Purchase Acts	4,295	11,674	8,201	35,599	23,787	49,983	8,375
Homestead or Grazing Leases	64,834	375	295,696	850,066	238,876	194,839	568,958
Poison Land Leases ¹	9,530	...	...	...	...	...	...
Workingmen's Blocks ²	8	149	131	189	148	99	56
Total ...	351,999	764,203	1,142,505	2,005,820	1,891,367	1,923,172	1,970,082
Number of holdings	1,888	3,573	4,362	5,861	5,403	4,265	4,871

* For year ended 30th June. 1. Provisions repealed by Act of 1906.

2. Closer settlement. (See § 8, 7.)

Particulars as to the total areas in process of alienation are given in a later part of this section. (See § 11.)

7. Tasmania.—The various types of conditional purchases in this State are as follows:—(i.) Selection of rural land; (ii.) homestead areas; (iii.) selection in mining areas; and (iv.) sales by auction on credit, either of town or rural lands. Upon all first-class lands purchased or selected under the Acts now in force habitual residence is necessary for five years, commencing to run two years after the date of purchase, and must be continuous; but on land within a mining area the necessary period of residence is reduced to three years. If purchased at auction on credit all lands (town or rural) must be improved to the value of a sum at least equal to the sale price of the land. No person may hold more than 200 acres of first-class, 300 acres of second-class, and 600 acres of third-class lands on credit at one time. The Lands Department advances four-fifths of the survey fee to the selector of first-class land, but for lands purchased by auction and for second and third-class lands, the survey fee must be paid in full. The amount of this fee ranges according to the class and area of land from £4 10s. to £20.

(i.) *Selection of Rural Lands.* From 15 to 600 acres according to the quality of the land may be selected. The cash price ranges from 5s. an acre upwards, payable with interest over terms of 14 to 18 years. The conditions as to residence on first-class land and as to improvements on all classes are as stated above.

(ii.) *Selection of Homestead Areas.* 50 acres of first-class land at the price of £1 an acre with one-third added for credit, may be selected as a homestead area. Provision is made for easy payments, extending over a term of 19 years. A grant will be issued upon fulfilment of the conditions pertaining to improvements and residence.

(iii.) *Selection in Mining Areas.* From 10 to 100 acres in a proclaimed "Mining Area" may be selected as first-class agricultural land. The terms as to payment of purchase-money are the same as in the case of selection of rural lands, mentioned above.

(iv.) *Conditional Sales on Credit.* Both town and rural lands may be sold on credit, either at auction or by private contract. In the case of sales of town lands on credit, improvements may be required to be effected. Such improvements are obligatory in the case of credit purchase of rural lands. Residence for five years is necessary in the case of a credit purchase of first-class rural land (except lands within a mining area). The purchase-money is payable over a term of fourteen years.

(v.) *Areas Sold Conditionally.* The following table shews the areas alienated absolutely under systems of conditional purchases and sales on credit, the conditions having been fulfilled, and also shews the areas sold conditionally and the applications for conditional purchases received and confirmed, during the year 1901 and from 1907 to 1911:—

TASMANIA.—CONDITIONAL PURCHASES, 1901 and 1907-1911.

Particulars.	1901.	1907.	1908.	1909.	1910.	1911.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
<i>Completion of Conditional Purchases</i> ¹	23,781	36,492	42,362	41,942	42,276	33,055
<i>Sold Conditionally—</i>						
Free Selections	40,004	121,186	120,420	183,237	145,651	211,447
Homestead Areas	9,108	1,148	2,037	971	864	274
Auction Sales on Credit	12,961	2,571	2,740	4,988	4,865	2,437
Other Sales (Town Lands)	636	2,093	1,632	2,400	2,380	1,493
Total...	62,709	126,968	126,829	191,596	152,760	215,651
<i>Applications—</i>						
Received	1,444	1,965	3,225	2,929	3,171	2,136
Confirmed	768	932	1,249	1,501	1,180	1,241

1. Including selections and sales on credit.

Particulars of total areas alienated and in process of alienation are given hereinafter. (See § 11.)

§ 7. Leases and Licenses.

1. *Introduction.*—Leases and licenses are issued in all the States and in the Northern Territory for various terms and upon various conditions. In Victoria, Queensland, South Australia, and the Northern Territory perpetual leases are issued for an indefinitely long period upon payment of an annual rent, while in all the States leases or licenses of comparatively large areas may be obtained for pastoral purposes. Provision has also been made in all the States for convenient forms of leases and licenses for various special purposes, and also for special classes of lands. The leases and licenses dealt with below are exclusive of those issued under Closer Settlement and kindred Acts, and also of those issued for mining and auxiliary purposes. (See §§ 8 and 9.)

2. New South Wales.—The following are the various types of leases and licenses issued in this State:—(i.) Conditional leases; (ii.) conditional purchase leases; (iii.) settlement leases; (iv.) improvement leases; (v.) annual leases; (vi.) residential leases; (vii.) special leases; (viii.) snow leases; (ix.) pastoral leases; (x.) scrub leases; (xi.) inferior lands leases; (xii.) occupation licenses; (xiii.) Western lands leases; (xiv.) Homestead farm leases; (xv.) Suburban holdings leases; (xvi.) Crown leases; (xvii.) Irrigation farm leases.

(i.) *Conditional Leases.* Before applying for a conditional lease it is necessary to apply for a residential conditional purchase, in virtue of which such a lease may be held. The area of land conditionally leased may not be less than 40 acres, nor more than three times the area of the conditional purchase, nor must the area of the two together exceed, except by permission, 1280 acres in the Eastern, or 2560 acres in the Central division. The lease is for forty years, and the annual rent may, on application, be periodically determined by appraisalment. The whole or part of the lease may be converted into an additional conditional purchase.

The total area held under conditional leases on the 30th June, 1912, was 15,670,320 acres, the total rent therefrom being £189,546, as compared with an area of 15,227,269 acres at a rent of £182,402 on the 30th June, 1911.

(ii.) *Conditional Purchase Leases.* This is a form of tenure by which land is first held under a rental, and may continue to be so held during the term of the lease, which is 40 years, with a condition of 10 years' residence, similar to a Residential Conditional Purchase. There is a right of purchase, which may be exercised by converting the lease into a Conditional Purchase at any time after confirmation of the Conditional Purchase Lease application.

It may be mentioned that no lands are now being made available for settlement under this tenure.

The following statement gives particulars of conditional purchase leases applied for and confirmed during the year ended 30th June, 1912:—

NEW SOUTH WALES.—CONDITIONAL PURCHASE LEASES.

YEAR ENDED 30TH JUNE, 1912.

Applications Received.		Applications Confirmed.			
Number.	Area.	Number.	Area.	Capital Value.	Annual Rent.
	Acres.		Acres.	£	£
32	11,457	23	7,911	7,758	182

The total area held under conditional purchase leases on 30th June, 1912, was 632,515 acres, compared with an area of 675,961 acres held on the same date in 1911.

(iii.) *Settlement Leases.* 1280 acres for agricultural, and up to 10,240 acres for grazing purposes, may be selected as settlement leases; these areas may be increased by the Local Land Board by additional settlement leases.

The lease is for a term of forty years. The annual rent for every period of fifteen years may be fixed by the Minister or on appeal by appraisalment. The holding must be the *bonâ-fide* residence of the lessee. Regulations as to fencing and the destruction of vermin must be complied with. 1,280 acres of the lease may be converted into a homestead grant. Settlement leases may be converted into original conditional purchases.

The following statement gives particulars of applications for settlement leases received and confirmed during the year ended 30th June, 1912:—

**NEW SOUTH WALES.—SETTLEMENT LEASES,
YEAR ENDED 30TH JUNE, 1912.**

Applications Received.		Applications Confirmed.		
Number.	Area.	Number.	Area.	Rent.
	Acres.		Acres	£
126	384,505	102	316,284	2,193

The total area held under settlement leases on the 30th June, 1912, was 7,829,712 acres at an annual rent of £95,974, as against 7,782,720 acres at a rent of £96,769 on the same date in the preceding year.

(iv.) *Improvement Leases.* Scrub or inferior lands can be obtained in the Eastern or Central Divisions by auction or tender at a moderate annual rental for a lease term of twenty-eight years. 640 acres may be converted into a homestead selection. On the 30th June, 1912, an area of 6,418,260 acres was held under improvement leases, the total annual rent amounting to £47,807 or an average of 1½ pence per acre.

(v.) *Annual Leases.* Annual leases are renewable, and any number of leases, each of whose area may be 1920 acres, may be held by the lessee. The annual rent is notified in the *Gazette*. Security of tenure is not guaranteed. On the 30th June, 1912, there were current 8903 annual leases for 4,262,930 acres, producing a yearly rental of £30,272.

(vi.) *Residential Leases.* Only lands situated within proclaimed gold or mineral fields are available for holdings of this class. An applicant must be a holder of what is termed a "miner's right," or "mineral license," and must pay a deposit of £1, provisional rental of one shilling per acre applied for, and the survey fee. The maximum area that may be leased is twenty acres, and the term may not exceed twenty-eight years. Fences and buildings must be erected. On the 30th June, 1912, there were 924 leases current for 13,637 acres at a rental of £1630.

(vii.) *Special Leases.* These leases are issued chiefly for industrial or business purposes, for the erection of dams, tanks, irrigation works, mills, etc. The area may not exceed 320 acres, except in the case of leases under secs. 89 and 92 of the Act of 1884, for such purposes as wharves, jetties, tramways, and irrigation works, and the term of a special lease may not exceed twenty-eight years. Special leases may be obtained either by application, purchase at auction, or by tender. A special lease may, under the Crown Lands (Amendment) Act 1908, be converted into (a) a conditional purchase lease, (b) a conditional purchase, (c) a homestead selection, (d) a settlement lease, or (e) a conditional lease. On the 30th June, 1912, there were 5471 leases current, comprising an area of 596,179 acres, at a total rent of £32,006, as compared with 563,378 acres at a rent of £30,863 in the preceding year.

(viii.) *Snow Leases.* Lands not held under pastoral or other lease, which may be usually covered with snow for a part of each year, may be leased in areas of not less than 1280 acres, nor more than 10,240 acres. Such leases are sold by auction or let by tender or by after-auction tender for terms not exceeding ten years. On the 30th June, 1912, there were 19 leases current, covering an area of 60,104 acres, at a rental of £451 per annum.

(ix.) *Leases under Section 18, Act of 1903.* The only existing pastoral leases under the Crown Lands Act are situated in the Western district (see par. xiii. hereof). Under the provisions of the amending Act of 1903, Section 18, leases may, on the recommendation of the Local Land Board, be granted to the registered holder of any pastoral lease, occupation license, or preferential occupation license, for an area not exceeding one-third of the total area comprised within the lease, license, or lease and license, at the date of expiration of the pastoral lease. The term of the lease may not exceed twenty-eight years, and the lease is subject to such rent and conditions as may be determined. At the end of the year 1911-12, there were 154 leases current for 1,098,981 acres at a rental of £10,069 per annum.

(x.) *Scrub Leases.* Leases of land declared as "Scrub Land" may be sold by auction or tender for a maximum term of twenty-one to twenty-eight years. The total area held under scrub leases on the 30th June, 1912, was 2,273,123 acres at a total rent of £8712.

(xi.) *Inferior Land Leases.* Isolated or abandoned inferior lands may be leased by auction or tender for a maximum period of from twenty to twenty-eight years. At the close of the financial year 1911-12 there were current thirty-eight leases, covering 129,651 acres, at a rental of £888 per annum.

(xii.) *Occupation Licenses.* There are two forms of occupation licenses, viz., (a) preferential, consisting of the areas within expired pastoral leases, and (b) ordinary, which relate to the parts of holdings formerly known as resumed areas. Occupation licenses are granted annually by the Minister for Lands at rents determined by the Land Boards, and are terminable at notice. On the 30th June, 1912, there were 1249 occupation licenses current, embracing about 8,559,404 acres; on the same date there were in force 2129 permissive occupancies for an area of 949,942 acres, returning a revenue of £6291. These do not include eighty-eight permissive occupancies granted to the Commonwealth Government for rifle ranges, etc., the area of which is 9809 acres, and the rental £107.

(xiii.) *Western Lands Leases.* Subject to existing rights and to the extension of tenure to the 30th June, 1943, which might be granted to a lessee on bringing his lease within the provisions of the Western Lands Act 1901 (see § 2, 1 ii., above), all forms of alienation, other than by auction and leases, prescribed by the Crown Lands Act, ceased to operate within this division from the 1st January, 1902. Lands are declared open for lease by notice in the *Government Gazette*. The annual rent is determined by the Commissioners for periods not exceeding ten years. No rent or license fee may be less than 2s. 6d. per square mile, but it may not be fixed at a higher rate than sevenpence per sheep on the carrying capacity of the land as determined by the Commissioners. All lands leased must be fenced. Special leases may be granted to discoverers of artesian water.

(xiv.) *Homestead Farms.* Under the Crown Lands Act 1912, suitable Crown lands may be set apart for homestead farms.

Applications for such farms are dealt with by the local land board, but the area and capital value are fixed by the Minister. A condition of perpetual residence attaches, and after five years a lease in perpetuity may be granted. The annual rent is $2\frac{1}{2}$ per cent. of the capital value, but the lessee may during the first five years expend in improvements an amount equal to the rent, in lieu of payment of such rent. After the expiration of the first 25 years of the perpetual lease, and after each subsequent period of twenty years, the capital value is again determined by the local land board on the same basis as it was fixed in the first instance, and exclusive of any improvements effected by the lessee, but inclusive of any improvements owned by the Crown.

On the 30th June, 1912, 27,815 acres were occupied as homestead farms, at an annual rental of £900.

(xv.) *Suburban Holdings.* Under the Crown Lands Act 1912, the Minister may set apart any Crown lands for disposal by way of suburban holdings. The area of a suburban holding is determined by the Minister, and the title is a lease in perpetuity.

A condition of perpetual residence attaches to each holding, and the annual rent is $2\frac{1}{2}$ per cent. of the capital value. As in the case of homestead farms, after the first 25 years of the lease the unimproved value of the land is again determined, a similar reappraisal taking place after each further period of twenty years.

On the 30th June, 1912, 1085 acres were occupied as suburban holdings, at an annual rental of £136.

(xvi.) *Crown Lease.* Under the Crown Lands Act 1912, the Minister may set apart any Crown land for disposal by way of "Crown lease," either for agriculture or for grazing, or for both.

The term of a Crown lease is 45 years, and the lessee must reside continuously on the land leased.

The annual rent is $1\frac{1}{2}$ per cent. of the capital value, such value to be re-appraised by the local land board at the end of the fifteenth and thirtieth years of the lease.

During the last five years of a Crown lease, the holder thereof may convert as much of the lease as does not exceed a home maintenance area into a homestead farm.

On the 30th June, 1912, 168,392 acres were held under Crown lease, at an annual rental of £1588.

(xvii.) *Irrigation Farms.* Under the Crown Lands Act 1912, where public moneys have been expended in the irrigating of any Crown land, such land is divided into suitable blocks or farms by the Trust, by whom they are allotted and the capital value determined.

The title is a lease in perpetuity, continuous residence being one of the conditions. The annual rental is $2\frac{1}{2}$ per cent. of the capital value, which, as in the case of homestead farms, is periodically re-determined by the Trust. (See "Irrigation Plants," section xiv., § 3.)

(xviii.) *Leases and Licenses Current.* On the 30th June, 1912, there were 60,153 leases and licenses current under the Lands Department and the Western Land Board, comprising 125,827,179 acres of Crown Lands. Of these leases there were 39,099, comprising 20,149,294 acres, in the Eastern Division; 18,036, comprising 28,758,095 acres, in the Central; and 3,018, comprising 76,919,790 acres, in the Western Division.

The following table shews the areas held under various descriptions of leases and licenses at the end of the year 1901, and at the end of the financial years 1908-9, 1909-10, and 1910-11, and also the area and rental of leases current on the 30th June, 1912:—

**NEW SOUTH WALES.—AREAS OCCUPIED UNDER LEASES AND LICENSES,
1901 AND 1908-1912.**

Leases and Licenses.	1901.	1908-9.	1909-10.	1910-11.	1911-12.	
					Area.	Rent.
	Acres.	Acres.	Acres.	Acres.	Acres.	£
Pastoral	44,805,221	1,196,715	1,137,095	1,137,095	1,137,095	706
Outgoing pastoral lessees ...	—	1,142,409	1,136,141	1,096,327	1,098,981	10,069
Western land leases ...	—	73,711,644	73,912,534	74,327,246	74,838,648 ¹	91,387
Occupation (i.) Ordinary	25,812,215	8,087,161	7,464,823	6,821,352	6,553,241	12,609
licenses (ii.) Preferential	12,985,651	3,190,085	2,529,484	2,177,318	2,046,163	12,369
Homestead leases ...	10,953,388	807,206	636,440	593,628	489,788	1,054
Condit'l. leases—(i.) Gazetted	13,014,055	15,480,660	15,581,163	15,227,269	15,670,320	189,546
(ii.) Not gazetted (under provisional rent)	966,887	815,795	741,802	1,073,586	490,507	4,087
Conditional purchase leases...	—	534,499	669,795	675,961	632,515	18,320
Settlement leases ...	3,468,675	6,671,742	7,569,925	7,782,720	7,829,712	95,974
Improvement " ...	5,551,060	6,676,655	6,864,330	6,430,605	6,418,260	47,807
Annual " ...	6,755,942	5,885,768	5,405,694	4,095,280	4,262,930	30,272
Scrub " ...	1,635,415	2,253,952	2,294,314	2,255,758	2,273,123	8,712
Snow land " ...	79,582	76,930	71,730	63,864	60,104	451
Special " ...	124,877	419,469	496,759	563,378	596,179	32,006
Inferior land " ...	288,530	106,090	106,562	128,711	129,651	389
Artesian well " ...	358,071	102,400	92,160	92,160	71,680	144
Blockholders' " ...	—	1	1	1	1	6
Residential leases (on gold and mineral fields) ...	5,751	12,640	13,387	13,383	13,637	1,630
Church and school lands ...	97,207	29,647	25,188	14,014	9,720	501
Permissive occupancies ² ...	118,634	915,521	979,667	919,652	949,941	6,291
Prickly pear leases ...	—	62,138	66,789	62,157	57,691	980
Crown lease ...	—	—	—	—	168,392	1,588
Homestead farms ...	—	—	—	—	27,815	900
Suburban holdings ...	—	—	—	—	1,085	136
Total under Lands Dept. and Western Land Board	126,921,161	128,179,127	127,755,783	125,551,465	125,827,179	567,934

1. Includes 883,356 acres held under Permissive Occupancy at a rental of £386.

2. Permissive Occupancies in the Western Division not included.

The total annual rent derived from the leases and licenses issued by the Lands Department and the Western Lands Board amounted to £567,934, or an average of 1.083 pence per acre. Particulars regarding leases and licenses issued by the Mines Department are given in a later part of this section. (See § 9. *Occupation of Crown Lands for Mining Purposes.*)

3. **Victoria.**—The various types of leases and licenses (exclusive of Closer Settlement and Mines Department leases and licenses) which may be issued in this State are as follows:—(i.) Grazing area leases; (ii.) perpetual leases; (iii.) Mallee perpetual leases; (iv.) licenses of auriferous lands; (v.) swamp or reclaimed lands leases; (vi.) grazing licenses and pastoral leases; (vii.) leases and licenses for other than pastoral purposes; and (viii.) State forests and timber reserves licenses.

A description in detail of the conditions which govern the issue of these various leases and licenses may be found in the previous issues of the Year Book. (See Year Book No. 5, pp. 291-2.)

Areas held under Leases and Licenses. The following statement shews the areas of Crown lands occupied under leases and licenses at the end of the year 1901, and from 1907 to 1911.

**VICTORIA.—OCCUPATION OF CROWN LANDS UNDER LEASE OR LICENSE,
1901 and 1907-1911.**

Tenure.	Area in Acres.					
	1901.	1907.	1908.	1909.	1910.	1911.
Pastoral Leases	39,450	59,510	63,510	51,450	14,200	—
Grazing Area Leases	2,338,649	3,402,536	3,183,800	3,087,173	3,006,998	2,950,226
Grazing Licenses—						
Land Acts 1890-91	5,908,985	—	—	—	—	—
Land Acts 1901 (exclus. of Mallee)	—	5,833,488	6,469,855	6,774,794	5,763,489	5,328,249
Mallee Lands	—	5,217,846	4,467,218	4,970,048	5,273,592	5,413,216
Auriferous Lands (Licenses)	377,427	104,555	106,040	103,966	101,623	99,008
Swamp Lands (Leases)	4,200	4,513	4,566	4,500	4,038	4,001
Perpetual Leases	8,137	33,319	31,952	32,354	22,159	9,950
Mallee Pastoral Leases	7,980,592	1,305,914	987,186	718,249	637,083	327,149
Mallee Allotment Leases	—	—	—	—	—	—
Perpetual Leases under Mallee Lands	—	—	—	—	—	—
Acts 1896-1901	448,842	604,236	641,219	641,837	610,693	587,350
Wattles Act 1890	4,427	—	—	—	—	—
Total	17,110,709	16,565,917	15,955,346	16,384,395	15,433,875	14,719,149

4. **Queensland.**—In this State Crown lands may be occupied under the following types of leases and licenses:—(i.) Grazing farms; (ii.) grazing homesteads; (iii.) occupation licenses; (iv.) special leases; (v.) perpetual lease selections; (vi.) special licenses; and (vii.) pastoral leases. General conditions as to applications for selections have been mentioned above. (See § 6, 4.)

(i.) *Grazing Farms.* Under this form of tenure an applicant may not obtain more than 60,000 acres, and the term of the lease may not exceed twenty-eight years. In order to obtain priority of claim the applicant may tender an annual rent higher than the notified one, for the first seven years. As soon as the land is fenced the selector becomes entitled to a lease, and may thereafter mortgage the same. The lease is subject to the condition of occupation during the whole term. The Crown may resume the whole or part of the lease.

Particulars of grazing farms are given in paragraph (iii.) hereinafter.

(ii) *Grazing Homesteads.* Lands opened for grazing selections are available for fifty-six days as grazing homesteads only, at the same rental, and for the same term of lease as for grazing farms. Personal residence is necessary for the first 5 years; thereafter the lease is subject to the condition of occupation.

Particulars of grazing homesteads are given in the following paragraph.

(iii.) *Grazing Farms, Homestead and Scrub Selections.* The following table shows the number of grazing farms, grazing homesteads, and scrub selections, for which applications were accepted in 1901 and from 1907 to 1911:—

**QUEENSLAND.—GRAZING FARMS, HOMESTEAD AND SCRUB SELECTIONS,
1901 and 1907-1911.**

Year.	Grazing Farms.		Grazing Homesteads		Scrub Selections.		Total.	
	No.	Area.	No.	Area.	No.	Area.	No.	Area.
		Acres.		Acres.		Acres.		Acres.
1901 ...	247	1,371,283	47	290,785	19	48,450	313	1,710,518
1907 ...	374	3,028,696	54	315,444	8	58,954	436	3,403,094
1908 ...	314	2,459,653	91	870,325	4	16,401	409	3,346,379
1909 ...	304	3,114,593	116	1,509,210	2	8,489	422	4,632,292
1910 ...	182	1,406,087	243	2,477,743	1 ¹	5,324	426	3,889,154
1911 ...	161	1,762,406	253	2,726,306	...	...	414	4,488,712

1 The Land Act 1910, makes no provision for the further selection of land as scrub selections.

The average rent in 1911 was $\frac{3}{4}$ d. per acre for grazing farms and 1d. per acre for grazing homesteads.

Particulars of total areas held under leases and licenses are given in a later part of this section. (See § 11.)

(iv.) *Occupation Licenses.* Annual licenses are granted to occupy Crown lands which have been declared open for such occupation by notification in the *Gazette*. The rent is as specified by the notification or as bid by the licensee, but the Minister may by notice before the 1st September in any year increase the rent. The total number of licenses in force at the end of the year 1911 was 1861 comprising an area of 67,936 square miles, the total rent being £39,992. Particulars of the area held under license for previous years are given in a later part of this section. (See § 11.)

(v.) *Special Leases.* Leases of any portion of land may be issued for a term, not exceeding thirty years to any person for any manufacturing, industrial, business or recreation purposes. Leases for a similar term may be issued for any country lands reserved for public purposes and which are infested with noxious weeds.

During the year 1911 there were 111 leases for special purposes granted, comprising an area of 4614 acres, the total annual rent being £588, and there were extant at the end of the year 525 such leases, reserving rents amounting to £3098 per annum. In addition, 29 leases of reserves, aggregating 9559 acres, were granted at rentals amounting to £114 per annum; the total number of these leases of reserves in force at the end of the year being

127, reserving rents amounting to £552. Particulars of special leases for previous years are given in a later part of this section. (See § 11.)

(vi.) *Perpetual Lease Selections.* Land proclaimed to be open for agricultural farm selection (see § 6, 4) may also be opened for perpetual lease selection, and the latter mode may be conceded priority of application over the former. The rent for the first period of ten years of the lease is $1\frac{1}{2}$ per cent. on the proclaimed purchase price of the land for agricultural farm selection. The rent for each succeeding period of ten years is determined by the Land Court. Similar conditions of occupation and improvement as are prescribed for agricultural farms are attached to perpetual lease selections.

(vii.) *Special Licenses.* Licenses to cut timber or to dig for any stone, gravel, earth, shells, or guano, may be issued.

(viii.) *Pastoral Leases.* Existing pastoral leases are now deemed to be held under the Land Act 1910. Lands open for selection as pastoral leases may be leased for a period not exceeding thirty years. The annual rent, per square mile, for the first ten years must be notified. If the value of the holding become enhanced by the development of public works in the neighbourhood, or by the occurrence of minerals on the holding, the rent may be redetermined.

The following table shews the total areas of pastoral leases (including resumed parts) occupied under the various Acts at the end of the year 1901 and from 1907 to 1911, inclusive:—

QUEENSLAND.—PASTORAL LEASES OCCUPIED UNDER VARIOUS ACTS,

1901 and 1907-1911.

Particulars.	Area in Square Miles.					
	1901.	1907.	1908.	1909.	1910.	1911.
Pastoral Leases Act 1869	39,307	3,524	1,513	1,379	890	...
Crown Lands Act 1884	243,586	31,802	26,842	18,733	11,710	...
Land Act 1897	15,046	3,686	3,686	1,307	86	...
Pastoral Leases Act 1900	50,076	27,130	24,061	24,061	21,739	...
Pastoral Holdings New Leases Act 1901 ...	—	339	349	347	500	...
Land Act 1902	—	235,597	258,975	280,960	305,924	...
Land Act 1910	—	—	—	—	—	346,637
Total	348,015	302,078	315,426	326,787	340,849	346,637

The gross area held at the end of the year 1911 for purely pastoral purposes (under *Occupation Licenses and Pastoral Leases*) was 414,573 square miles, at rentals aggregating £337,601 per annum. The area was 14,608 square miles greater than that for the previous year, and the rental was £15,915 greater. The average rent was 16s. 3½d. per square mile, as against 16s. 1d. for the previous year.

5. **South Australia.**—The following are the various types of leases and licenses which are issued in this State:—(i.) Perpetual leases; (ii.) miscellaneous leases; (iii.) grazing and cultivation leases; (iv.) reclaimed swamp leases; (v.) licenses for special purposes; (vi.) leases under the Pastoral Act 1904; and (vii.) leases with right of

purchase. The conditions under which these various leases and licenses are issued will be found in detail in the previous issues of the Year Book. (See Year Book, No. 5, pp. 294 and 295.)

Area held under Lease. The following table shews the area held under leases and licenses at the end of the year 1901, and from 1907 to 1911:—

SOUTH AUSTRALIA.—AREA UNDER LEASES AND LICENSES, 1901 and 1907-1911.

Particulars.	1901.	1907.	1908.	1909.	1910.	1911.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Right of Purchase Leases ...	5,639,519	4,579,418	4,424,814	4,232,009	3,697,423	3,150,533
Perpetual Leases ...	7,115,782	12,568,576	13,269,290	14,088,223	14,789,305	15,020,544
Pastoral Leases ...	68,916,125	79,388,240	63,009,650	87,038,450	91,434,450	91,546,770
Other Leases ...	3,905,729	1,985,865	1,812,959	1,513,032	1,394,964	1,283,663
Total held under Lease ...	85,577,155	98,522,100	102,516,713	106,871,714	111,316,142	111,001,510

6. **Western Australia.**—The following are the various types of leases and licenses issued in this State:—(i.) Pastoral leases; (ii.) permits and licenses to cut timber; (iii.) special leases; and (iv.) licenses for quarrying.

The conditions of tenure with respect to these leases and licenses may be found in the previous issues of the Year Book. (See Year Book No. 5, pp. 296-7.)

Areas Held under Leases and Licenses. The following table shews the number and area of leases and licenses issued during the year 1901, and from 1907 to 1912:—

WESTERN AUSTRALIA.—LEASES AND LICENSES ISSUED, 1901 and 1907-1912.

Particulars.	1901.	1907. ¹	1908. ¹	1909. ¹	1910. ¹	1911. ¹	1912. ¹
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Pastoral Leases ...	19,909,251	26,367,463	16,161,172	9,787,020	10,130,358	9,057,602	11,245,895
Special Leases ...	149	13,727	71,900	12,498	6,212	3,112	6,760
Leases in Reserves ...	324	75,640	152,050	31,376	327,020	174,107	188,444
Timber Leases and Permits ² ...	109,630	19,300	30,433	38,500	236,970	68,430	119,000
Residential Lots ...	221	21	1	3	6	4	18
Total	20,019,575	26,476,151	16,415,556	9,869,397	10,700,566	9,302,655	11,560,117
Number Issued ...	1,466	873	870	480	505	396	487

1. For financial year ended the 30th June. 2. No timber leases granted since 1903.

Particulars as to the total area occupied under leases and licenses are given in a later part of this section. (See § 11.)

7. **Tasmania.**—The several forms of leases and licenses in this State are as follows:—(i.) Grazing leases; (ii.) miscellaneous leases; (iii.) timber licenses; and (iv.) occupation licenses.

The conditions which govern the issue of these leases and licenses are more fully dealt with in the previous issues of the Year Book. (See Year Book No. 5, p. 297.)

Area held under Leases and Licenses. The following table shows the areas of Crown lands occupied under leases and licenses at the end of the year 1901 and from 1907 to 1911:—

TASMANIA.—LEASES AND LICENSES, 1901 and 1907-1911.

Particulars.	1901.	1907.	1908.	1909.	1910.	1911.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Ordinary Leased Land	1,280,688	1,145,823	1,235,823	1,173,823	1,176,900	1,242,400
Islands	149,165	109,531	103,130	90,100	87,100	62,000
Land Leased for Timber	40,768	88,035	91,972	100,098	108,889	134,516
Total	1,470,621	1,343,389	1,430,925	1,364,021	1,372,889	1,438,916

8. Northern Territory.—The system of land settlement in the Northern Territory is being reorganised by the Commonwealth Government. A new Lands Ordinance was passed in December, 1912, known as the Crown Lands Ordinance 1912, and future disposal of land in the Territory will be made in accordance with this Ordinance, which provides for a leasehold system only, and no further alienation of Crown lands will be permitted, unless such alienation is in pursuance of existing agreements. Under this Ordinance, the classification and control of Crown lands is in the hands of a Board, consisting of the Director of Lands, the Director of Agriculture, and the Chief Surveyor. The classified land is leased in blocks, the maximum area ranging from 300 square miles of first-class pastoral to 1280 acres of first-class agricultural land. Before offering any land for leasing, the Board fixes the annual rental, but every lease is subject to reappraisal of rent at specified periods, viz., every fourteen years in the case of town lands, and every twenty-one years in the case of agricultural and pastoral lands.

Leases under this ordinance are in perpetuity, except as regards pastoral and miscellaneous leases, the term of which is 21 or 42 years, according to the quality of the land leased.

The lessee must reside on the land leased for a certain period every year, must fence, stock, and cultivate it to the extent prescribed, and must, within two years of the commencement of the lease, establish a home on it. In order to promote settlement in the Territory, the first five thousand blocks of agricultural land taken up on perpetual lease under this ordinance will be rent free during the life of the applicant, or for 21 years from the commencement of the lease, whichever period is longer.

Twenty-six such farms have already been surveyed on the Daly river, varying in size from 290 to 620 acres. These farms have been advertised for selection, and it is intended to arrange for transport facilities at low rates by means of Government steamers, which will ply between Darwin and the settlement, a distance of 150 miles. The Government will also provide fencing, building materials, implements, and stock at cost price, and on long terms, or will advance the money required for their purchase. The classification board is dealing also with an area of land in the vicinity of Pine Creek railway, about 70 miles from Darwin, with a view of establishing settlements there, under similar conditions, for mixed farming and grazing.

The various types of leases, licenses, and permits current are as follows:—(i.) Agricultural leases; (ii.) pastoral leases; (iii.) special leases; (iv.) leases with right of purchase; (v.) tropical products leases; (vi.) leases for horsebreeding stations; (vii.) licenses; and (viii.) pastoral and other permits. (See § 2, 7.)

(i.) *Area held under Lease, License, and Permit.* The following table shows the total area held under lease, license, and permit at the end of the year 1901 and 1907 to 1911:—

**NORTHERN TERRITORY.—AREA HELD UNDER LEASE, LICENSE, AND PERMIT
1901 and 1907-1911.**

Particulars.	1901.	1907.	1908.	1909.	1910.	1911.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Right of Purchase Leases ...	1,067	2,771	2,931	5,224	667	667
Pastoral Leases ¹ ...	111,476,240	105,918,880	102,123,040	95,559,840	98,729,120	92,045,540
Other Leases ² ...	1,176,961	1,347,858	1,233,457	512,650	445,236	1,698,754
Total Leased ...	112,654,288	107,269,509	103,419,428	96,077,714	99,175,023	93,744,961

1. See Table given below.

The following statement gives particulars of the areas held under the various types of lease and license as at the end of the year 1911, and included in the previous table under the heads of "pastoral leases" and "other leases."

"Pastoral leases" include:—

Pastoral leases ...	69,150,720 acres
Pastoral permits ...	22,516,580 "
Annual pastoral leases ...	378,240 "

Total "Pastoral leases" ... 92,045,540 acres

"Other Leases" include:—

Agricultural leases ...	8,417 acres
Leases for special purposes ...	10 "
Mineral leases ...	1,290 "
Gold leases ...	745 "
Occupation licenses ...	16 "
Special licenses ...	36 "
Tin-dredging permit ...	400 "
Coal and oil permits ...	1,666,560 "
Mixed farming permits ...	1,280 "
Approved applications under Tropical Products Act 1904 ...	20,000 "

Total "Other leases" ... 1,698,754 acres

§ 8. Closer Settlement.

1. **Introduction.**—In all the States, Acts have been passed authorising the Governments to repurchase alienated lands for the purpose of cutting them up into blocks of suitable size and throwing them open to settlement on easy terms and conditions. Special Acts have also been passed in several of the States authorising the establishment on particular lines of co-operative communities, village settlements, and labour colonies. Lands may be acquired either compulsorily or voluntarily in New South Wales, Victoria, Queensland, and Tasmania, but only voluntarily in South Australia and Western Australia.

The following table gives particulars up to the latest available date of operations under the Closer Settlement Acts for each State and the whole Commonwealth:—

**CLOSER SETTLEMENT.—TOTAL AREAS ACQUIRED AND ALLOTTED UP TO
30th JUNE, 1912.**

Particulars.		N.S.W.	Victoria.	Qld.*	S. Aust.	W. Aust.	Tas.	Cwlth.
Area acquired ...	acres	676,438	515,604	664,363	619,469	303,469	45,731	2,825,074
Purchasing price ...	£	2,535,796	3,721,485	1,713,165	1,889,444	270,622	118,531	10,249,043
Farms, etc., allotted	No.	1,485	3,354	2,357	1,744	†	180	†9,120
	acres	673,610	478,573	570,499	529,014	264,884	38,972	2,555,552

* To 31st December, 1911.

† Not available.

‡ Exclusive of Western Australia.

The following table shows the areas of private lands acquired in each State for the financial year 1901, and for each year from 1907 to 1912 :—

**CLOSER SETTLEMENT.—AREAS OF PRIVATE LANDS ACQUIRED, 1901 and
1907-1912.**

Year ended 30th June.	N.S.W.	Victoria.	Q'land.*	S. Aust.*	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901 ...	...	28,553	132,760	...	46,624	...	207,937
1907 ...	142,403	207,775	409,563	326,576	170,881	13,397	1,270,595
1908 ...	142,403	211,140	456,742	354,454	170,881	25,177	1,360,797
1909 ...	321,209	237,400	497,095	500,464	215,822	33,079§	1,805,069
1910 ...	461,723	343,829	497,095†	527,501†	249,522	34,441§	2,114,111
1911 ...	676,278	455,954	537,449†	592,972†	297,391	34,448§	2,594,492
1912 ...	676,438	515,604	664,363†	619,469	303,469	45,731§	2,825,074

* Particulars are for calendar years. † To the preceding 31st December.

‡ To 30th June. § Including 4581 acres of Crown lands.

2. Government Loans to Settlers.—For the purpose of promoting pastoral, agricultural, and similar pursuits, and with the object of assisting settlers in erecting buildings and carrying out improvements on their holdings, general systems have been established in all the States, under which financial aid is rendered to settlers by the State Governments. These general systems are more particularly referred to in the section in this book dealing with "Agriculture." In many of the Closer Settlement and similar Acts, however, special provisions have been inserted with the object of lending money to settlers taking up land under these Acts, with which to build homes or effect improvements. The principal features of these provisions are referred to below.

3. New South Wales.—Under the Closer Settlement Act of 1901 provision was made for the acquisition of private lands or of Crown lands held under lease, for the purpose of closer settlement. No power of compulsory resumption was conferred by the Act, which was consequently practically inoperative. Under the Closer Settlement Act of 1904, as amended in 1906, 1907, and 1909, and the Closer Settlement Promotion Act 1910, the Government is empowered to resume private lands, either by agreement or by compulsory purchase, and to alienate them on favourable terms to persons who desire to settle and make homes for themselves and their families on the soil. The administration of the Closer Settlement Acts is in the hands of a Board. Land acquired under the Acts is subdivided into blocks or farms, and by notification in the *Government Gazette* is declared to be a settlement purchase area available for application. The *Gazette* notice also gives all necessary information as to the class and character of the land, and the capital value, area, etc., of each block or farm.

(i.) *Closer Settlement Purchase.* Under this tenure a settler may acquire the freehold of the land under a system of deferred payments. A deposit of 5 per cent. of the notified value of the settlement purchase must be lodged with the application, and a

similar amount by way of instalment, paid annually until the purchase-money, together with interest at the rate of 4 per cent., is paid off. Under this system the balance due to the Crown will be paid off in thirty-eight years, the holding then becoming a freehold. A condition of residence for ten years attaches to every settlement purchase. Under the amending Act of 1909 postponement of the payment of instalments may be granted by the Minister, subject to the conditions (a) that additional improvements to the value of the amount postponed be made on the land within twelve months, and (b) that interest at 4 per cent. per annum be paid on the amount postponed.

(ii.) *Closer Settlement Annual Leases.* Leases for areas not exceeding 320 acres may be obtained under the Closer Settlement Acts at a rent fixed by the Board. They may be renewed from year to year on payment of the yearly rent in advance. The land held under this form of lease may be applied for by the lessee as a settlement purchase.

(iii.) *Sales by Auction.* Areas within closer settlement districts necessary for township settlement may be set apart by notification in the *Gazette*. Allotments, each of which may not exceed half an acre in extent, within such areas may be sold by auction.

(iv.) *Private Sub-division.* An important feature of the amending Act of 1909 is the power which is given to owners for private sub-division of lands which have been notified by proclamation for resumption. Upon the owner entering into an agreement with the Minister to sub-divide the land and to sell or lease in such areas and subject to such terms as may be agreed upon, the Minister is empowered to suspend the power of resumption for a period not exceeding two years.

(v.) *The Closer Settlement Promotion Act 1910.* Under this Act any three or more persons who are qualified to hold settlement purchases and who desire to purchase from the same owner any private lands may, upon entering into an agreement with the owner and subject to valuation by the Advisory Board and the Savings Bank Commissioners, acquire such lands through the Minister on Closer Settlement conditions. The maximum sum which may be advanced for the purposes of this Act may not exceed £1,000,000 in any financial year.

(vi.) *Areas Acquired and Disposed of.* Up to the 30th June, 1912, ten areas had been opened for settlement under the Closer Settlement Acts.

The following statement gives particulars of the aggregate areas opened up to the 30th June, in each year from 1906 to 1912:

NEW SOUTH WALES.—CLOSER SETTLEMENT AREAS, 1906 to 1912.

Year Ended 30th June.	Areas.			Capital Values.		
	Acquired Lands.	Adjoining Crown Lands.	Total.	Acquired Lands.	Adjoining Crown Lands.	Total.
	Acres.	Acres.	Acres.	£	£	£
1906	53,523	13,166	66,689	137,795	24,589	162,384
1907	142,403	25,712	168,115	438,490	37,178	475,668
1908	142,403	25,719	168,122	438,362	37,192	475,554
1909	321,209	28,064	349,273	1,246,508	42,878	1,289,386
1910	461,723	83,045	544,768	1,624,858	147,977	1,772,835
1911	591,861	86,127	677,988	2,293,399	148,696	2,442,095
1912	676,438	87,760	764,198	2,666,516	156,796	2,823,313

The total area thus set apart has been divided into 1535 farms comprising 717,121 acres, the remaining area being reserved for recreation areas, roads, stock routes, schools,

The following table gives particulars as to the disposal of the farms by closer settlement purchase for each year ended the 30th June, 1906 to 1912:—

NEW SOUTH WALES.—CLOSER SETTLEMENT ALLOTMENTS, 1906 to 1912.

Year.	Farms Allotted by Board to Date.			Total Amount received in respect of Settlement Purchases.	Total Number of Applications received.
	Number.	Area.	Value.		
	No.	Acres.	£	£	No.
1905-6 ...	98	48,567	120,445	6,560	120
1906-7 ...	320	154,922	470,787	24,698	551
1907-8 ...	326	157,649	475,554	31,793	558
1908-9 ...	688	312,075	1,192,283	73,133	953
1909-10 ...	941	471,639	1,731,480	147,945	1,209
1910-11 ...	1,316	604,319	2,420,035	220,720	1,328
1911-12 ...	1,485	673,610	2,722,564	274,440	1,555

(vii.) *Labour Settlements.* These settlements were founded by the Labour Settlements Acts 1893 and 1894, which have now been amended and repealed by the Labour Settlements Act 1902. Land may be set apart for lease for a period of 28 years as a labour settlement under the superintendence of a Board of Control. The functions of the Board of Control are to enrol members of the settlement; to make regulations concerning the work to be done; to apportion the work among the members; and to distribute the wages and profits. The Minister is empowered to grant financial assistance to the Board of Control.

(a) *Settlements Established.* Only two settlements had been established under the Act up to the 30th June, 1912. Particulars are given in the following statement:—

NEW SOUTH WALES.—PARTICULARS OF LABOUR SETTLEMENTS, 30th JUNE, 1912.

Settlement.	Date of Establishment.	Area.	Population:				Value of Improvements.	Loans Advanced by the Government.
			Men Enrolled.	Women.	Children.	Total.		
		Acres.					£	£
Bega ...	1893	1,360	25	30	90	145	3,110	2,420
Wilberforce ...	1893	435	10	9	22	41	1,450	2,479
Total ...	—	1,795	35	39	112	186	4,560	4,899

The Murrumbidgee Irrigation Act 1910 provides for the acquisition of 1,668,000 acres near Narrandera, in Riverina, for irrigation and other purposes in connection with the Burrinjuck Irrigation Scheme. Part of this area has since been made available. (See *Water Conservation*, Section XVI., § 3.)

4. *Victoria.*—(i.) *Closer Settlement Acts, 1904 to 1909.* The Closer Settlement Acts (§ 2, p. 266) are administered by a Board consisting of three persons appointed by the Governor-in-Council, and intrusted with power to acquire, either compulsorily or by agreement, private lands in any part of the State for the purpose of Closer Settlement. The Board may dispose of all lands acquired, either Crown lands or repurchased lands, on conditional purchase leases either as (a) farm allotments not exceeding £2500 in value, (b) workmen's homes allotments not exceeding £100 in value, and (c) agricultural labourers' allotments not exceeding £200 in value. The price of the land must cover the cost of the original purchase and the cost of all improvements. Land acquired by the Board may also be sold in small areas in fee simple as sites for churches, public halls, butter factories, creameries, or recreation reserves.

The Board may approve of an agreement between an owner and one or more persons to purchase a farm or farms, not exceeding £2500 in value. On the property being acquired by the Board, the applicant obtains a lease under Closer Settlement conditions.

(a) *Closer Settlement Leases.* Every conditional purchase lease is for such a term of years as may be agreed upon by the lessee and the Board, and payment must be made with interest at $4\frac{1}{2}$ per cent. per annum by sixty-three half-yearly instalments, or such lesser number as may be agreed upon. Under the amending Act of 1906 postponement of payment of instalments may be granted by the Board up to 60 per cent. of the value of improvements. The lessee must personally reside during eight months in each year on his allotment, and for six years he must carry out prescribed improvements. Thereafter he may, with permission, transfer, assign, mortgage or sublet his allotment. After twelve years, if all conditions have been fulfilled, a Crown grant, with the same residence condition as that contained in the lease, will be issued. In the case of workmen's homes allotments the land must be fenced within one year, and a dwelling-house to the value of at least £50 must be erected within the same time; within two years further improvements must be made to the value of at least £25. As regards agricultural labourers' allotments, a dwelling-house to the value of at least £30 must be erected within one year, and within two years the allotment must be fenced.

(b) *Advances to Settlers.* The Board may make advances for the purpose of fencing and building dwelling-houses, and is empowered to erect dwelling-houses, outbuildings, or improvements on any allotment at a cost not exceeding £250 for any one allotment. Any sum so expended is repayable by instalments extending over a prescribed period, not greater than twenty years. Provision has also been made for deferring payments in cases of hardship, as well as for advances (to the extent of 60 per cent. of the value of the improvements) to enable work to be carried on. Special advances may also be granted to purchase wire netting in rabbit-infested districts.

(c) *Loans to Municipalities.* Under the Amendment Act of 1907 loans may be made out of the Closer Settlements Fund for the purpose of carrying out any road-making or other public works within the boundaries of an estate.

(d) *Areas acquired and made available for Closer Settlement.* The following statement shows the operations which have taken place in Victoria under the provisions of the Closer Settlement Acts, 1898 to 1910, up to the 30th June, 1901 and 1907 to 1912:—

VICTORIA.—CLOSER SETTLEMENT, 1901 and 1907-1912.

Year ended 30th June.	Total Area Acquired by Government to Date.	Total Cost to Date.	How Made Available for Settlement.					Number of Applications Granted to Date.	Total Receipts to Date.	Repayments of Principal to Date.	Area Available for Settlement.
			Farm Allotments.	Workmen's Homes Allotments.	Agricultural Labourers' Allotments.	Town Allotments.	Roads and Reserves.				
	Acres.	£	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£	Acres.
1901	28,553	151,566	28,461	69	—	44	240	193	7,529	—	—
1907	207,775	1,349,661	156,358	423½	1,108	308½	827½	1,212	163,203	60,224	2,429
1908	211,140	1,471,300	186,971	473	917	724	1,708	1,470	245,095	85,501	10,549
1909	237,400	1,579,958	193,015	228	660	610	2,242	1,645	337,803	121,247	5,789
1910	343,829*	2,390,738	237,670	243	1,659	617	2,242	1,880	391,746	153,890	9,302
1911	455,954	3,177,831	363,676	571	2,761	—	—	2,708	606,558	234,038	54,214
1912	515,604	3,721,485	474,410	512	3,651	—	—	3,354	765,076	318,388	71,367

* Includes eight estates (97,315 acres) not yet made available for settlement.

- (e) *Areas Alienated and in Process of Alienation.* The following table shows, so far as available, particulars of areas alienated absolutely and in process of alienation on the 30th June, 1901, and from 1907 to 1912:—

VICTORIA.—CLOSER SETTLEMENT. AREAS ALIENATED AND IN PROCESS OF ALIENATION, 1901 and 1907-1912.

Particulars.	1901.	1907.	1908.	1909.	1910.	1911.	1912.
	Acres	Acres.	Acres.	Acres.	Acres	Acres.	Acres.
<i>Alienated Absolutely—</i>							
Conditional Purchases completed ...	...	1,700	2,504	4,924	8,705	9,770	9,804
Sold for cash, etc. ...	183	239	268	1,307	1,320	1,382	1,450
Total ...	183	1,939	2,772	6,231	10,025	11,152	11,254
<i>In Process of Alienation ...</i>	...	164,561	174,812	190,784	221,565	303,024	468,769

(ii.) *The Small Improved Holdings Act 1906.* Under this Act, which has been repealed, 2822 acres at a cost of £53,568 allotted to 260 settlers were purchased close to towns where industrial employment could be obtained by the settlers.

These settlements are now under the control of the Closer Settlement Board.

(iii.) *Village Communities.* The settlement of land by Village Communities is now provided for in the Land Act 1901, but is not availed of to any extent. Certain unalienated Crown lands were surveyed into allotments of one to twenty acres. The price is not less than twenty shillings an acre. Additional areas may be acquired by conditional purchase. The rent is a nominal one for 3 years. The total amount of monetary aid advanced up to the 30th June, 1911, was £67,379, of which sum the amount repaid to date was £38,883. After three years a lease may be obtained.

Particulars of areas in process of cultivation under the Act are given hereinafter. (See § 11, 3).

On the 30th June, 1912, there were 1039 settlers actually residing, and 141 not residing, but improving, making a total of 1180 in occupation. Including wives and children the total number in residence was 4963. At the same date the area under cultivation was 13,725 acres; the value of live stock £48,766, and of improvement, £182,006.

(iv.) *Closer Settlement in the Irrigated Districts.* The movement for closer settlement in the irrigated districts started about four years ago. The State had expended between three and four million pounds on irrigation works, which were not being used to their full extent. Under the Goulburn Scheme, the largest of the State works, more than half the available water was being wasted. The reason was lack of people to cultivate the land as irrigation requires. In the various districts the average size of farms varied from 400 to 600 acres, while under irrigation from 20 to 80 acres will give employment to a good-sized family and furnish them a comfortable living. The large farms of the irrigation districts could not be properly cultivated by their owners, and the only way to make irrigation a success was to subdivide these holdings and bring in farmers to cultivate the smaller areas. To this end the State has offered to buy suitable land in any district having a reliable and ample water supply at a price fixed by impartial expert valuers, and in the past three years has purchased about 80,000 acres for this purpose. This land is sold to settlers on 31½ years' time with 4½% interest on deferred payments. These payments are calculated on the Credit Foncier basis and are equalised through the whole period. As a result, the settlers by paying six per cent. on the cost for 31½ years pay off both principal and interest. To help the settler of small capital, the State will build him a house and give 15 years to pay for it, will prepare a part of his area for irrigation and allow payments to be extended over 10 years. No cash payment is required on houses costing less than £150, but on houses costing more the cash payment

varies from 20 to 40 per cent. of the estimated cost. A cash payment of one-fifth the estimated cost of preparing land for irrigation is required. The State also makes loans to settlers equal to 60 per cent. of the value of permanent improvements, these loans to be repaid in 20 years. Five per cent. interest is charged on all advances—whether for houses, preparing land, or money furnished the settler. In the past 2½ years 856 irrigated blocks, averaging 65 acres, have been taken by settlers, of whom 353 were from overseas, chiefly from Great Britain, and 503 were Victorian. At Shepparton, the oldest of these settlements, there are now 100 families living where there were originally six. In Koyuga there are now 43 families with good houses, many young orchards, fine crops of lucerne and vegetables, where in November 1910 there was not a house, a family, or an acre of cultivated land. Eighteen months ago there were 27 houses in the Rochester district, now there are 232. In Tongala there are now 132 houses where fifteen months ago there were 30.

Similar progress has been made in the other settlements. The State has now in hand 30 additional houses which are of a better type than the original ones. This has been made possible because the settlers now applying have as a rule more capital than the earlier ones and desire better homes.

5. **Queensland.**—Under the provisions of the Closer Settlement Act of 1906 private lands may be re-purchased by the Crown, either by agreement or compulsorily.

(i.) *Compulsory Acquisition.* The owner of an estate in possession, the whole of which is proposed to be taken compulsorily, has the right to retain in one block, land of the value of £10,000 to £20,000 according to the value of the whole estate. The maximum sum which may be expended on the acquisition of land for the purpose of closer settlement is £500,000 in any one year.

(ii.) *Disposal of Land.* A sufficient part of the land acquired must be set apart for roads, public reserves, and townships, and the remainder is proclaimed open for selection as agricultural farms under the Land Act 1910, which repealed the Land Acts 1897 to 1909; the term of the lease is 25 years. The rent to be paid for the first year is equal to £10 for every £100 of the purchasing price; and (no payment being required during the second, third, or fourth years) an annual payment of £8 2s. 7d. for every £100, continued from the fifth to the twenty-fifth year will, at the end of the term, have paid off the principal sum together with interest.

(iii.) *Areas Acquired and Selected.*—The operations under the Closer Settlement Acts resulted up to the end of the year 1911 in the acquisition by the Government of twenty-nine estates, of a total area of 644,385 acres, at a total cost of £1,670,830. The following table gives particulars of the operations under the above Acts at the end of the year 1901 and of each year from 1907 to 1911.

QUEENSLAND.—CLOSER SETTLEMENT, 1901 and 1907-1911.

Year.	Number of Estates Acquired.	Total Area Acquired to Date.	Total Amount of Purchase Money.	Total Area Selected to Date.
		Acres.	£	Acres.
1901	15	132,760	335,056	124,710
1907	26	409,563	1,057,463	340,405
1908	27	456,742	1,208,013	364,334
1909	27	497,095	1,349,251	409,381
1910	27	537,449	1,490,489	437,496
1911	29	644,385	1,670,830	498,315 ¹

1. In addition there were at the end of the year 1911, 10,966 acres sold at auction and 3134 acres retained by the Government for experimental farms and other sales.

The total area opened for selection up to the end of the year 1911 was 563,970 acres, of which 498,315 acres had been selected by 1957 selectors. There remained 65,655 acres unselected or reserved. The total amount of rent paid up to the same date was £795,548, the amount in arrear being £9,841. At the end of the year 1911 there were 1957 selectors holding 2176 agricultural farms, 259 unconditional selections, and two prickly pear infested selections. In addition, land and improvements to the value of £79,982 had been sold at auction.

(iv.) *The Special Agricultural Selections Acts 1901 to 1905.* These Acts were partly repealed by the Amending Act of 1909, which was in its turn repealed by the Land Act 1910. Under the last Act land may be set apart for members of bodies of selectors who desire to settle in the same locality. The terms and conditions are similar to those in force for single selectors. Every group selection shall be subject to the condition of personal residence during the first five years of the term.

The Special Agricultural Selections Act 1905 provides that financial aid may be granted to all or any of the members of a body of selectors of agricultural homesteads. Advances may also be made to each selector for a value not exceeding £80 for the purpose of buying tools, rations, stock and poultry.

The portions opened for "group settlement" in 1911 numbered 1692, and comprised a gross area of 1,226,455 acres. Up to the end of that year 1316 portions, comprising 977,621 acres, valued at £600,358, had been applied for by members of the bodies of settlers for whom they were opened. The greater part of the remaining lots have since been selected.

6. *South Australia.*—Under the provisions of the Crown Lands Acts the Commissioner may repurchase land for the purposes of closer settlement at a cost not exceeding £600,000 in any two years.

Reference has already been made to the provisions of the Irrigation and Reclaimed Lands Acts 1908, regarding the settlement of reclaimed lands. (See § 7, 5 iv.)

(i.) *Disposal of Land.* The Crown Lands Act Further Amendment Act 1910 enlarges the value of the blocks into which estates may be subdivided for closer settlement purposes from £2000 to £5000 unimproved value. The purchase money with interest thereon at 4 per cent. per annum is payable in seventy half-yearly instalments, the first ten payments being interest only.

For the first five years, improvements to the value of £3 for every £100 of the purchase money must be yearly effected.

(ii.) *Areas Acquired and Selected.* The following table shews the area of land acquired by the Government in South Australia for the purposes of closer settlement, and the manner in which the same has been disposed of under the provisions of the Crown Lands Acts:—

SOUTH AUSTRALIA.—CLOSER SETTLEMENT, 1902 to 1911.

Year.	Area of Lands Repurchased to 31st Dec.	Agreements with Covenantants to Purchase.	Total Area Leased as Homestead Blocks.		Perpetual Leases.	Miscellaneous Leases.	Sold.	Remainder Unoccupied (including Roads).
			Right of Purchase.	Perpetual Lease.				
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1902	156,481	—	2,717	3,073	90,128	309	403	59,851
1903	156,481	60,331	2,487	2,895	89,378	274	566	550
1904	174,963	81,556	2,268	2,795	86,881	295	626	542
1905	214,752	116,854	2,057	2,907	82,431	295	736	9,472
1906	260,355	168,930	1,930	2,482	78,642	295	1,987	6,089
1907	326,576	235,673	1,758	2,306	77,017	211	4,808	4,303
1908	354,454	261,457	1,590	1,953	74,651	281	9,142	5,380
1909	500,464	296,013	1,381	1,779	75,045	50,056	24,641	51,549
1910	527,501	357,480	1,241	1,510	62,386	40,077	35,266	29,541
1911	622,422	411,370	1,077	1,414	55,121	40,082	43,969	69,389

During the financial year 1911-12 five properties aggregating 26,459 acres were repurchased. The total area repurchased at the 30th June, 1912, was 621,121 acres, the purchase money being £1,917,460. Of that area 589,461 acres had been allotted to 2401 persons, the average area to each being 246 acres.

(iii.) *Irrigation Areas.* Under the Irrigation and Reclaimed Lands Act 1908, 1909 and 1910, special provisions are made for granting perpetual leases of reclaimed lands. The maximum area of irrigable or reclaimed land one person may hold in any irrigation area is 50 acres. Each block is offered on perpetual lease, at a rent not less than a sum equivalent to 4 per cent. on the unimproved value of the land, plus the cost of reclaiming. For the first year only one-quarter of the fixed rent is payable, for the second year one-half, and for the third year three-quarters.

(a) *Irrigation Boards.* Irrigation Boards, to whom advances of money may be made by the Commissioner for Crown Lands, may be constituted in irrigation areas.

(b) *Government Loans to Settlers.* Under Part V. of the Act a fund is to be constituted, to be called the Lessees of Reclaimed Lands Loan Fund, consisting of moneys provided by Parliament, to be advanced to assist lessees to make improvements on their lands. The total amount owing by any lessee may not exceed £300. In cases of hardship the time may be extended by the Commissioner, the deferred payments carrying interest at 5 per cent.

During 1910 the Waikerie and Berri Irrigation Areas were gazetted. No irrigation areas were gazetted in 1911, but Rameo Village District has been added to the Waikerie Irrigation Area.

(iv.) *Village Settlements.* Out of the reserved lands the Commissioner is directed to set apart for the purpose of village settlement such land as he shall consider fit (a) for horticultural purposes, to be termed "horticultural land;" (b) for agricultural purposes, to be termed "commonage land;" and (c) land whereon any irrigation works are situated. Land so set apart is to be divided as follows:—Horticultural lands into blocks of as nearly as practicable equal unimproved value, and of about ten acres in extent; and the commonage lands into one or more blocks of such area as the Commissioner may determine, and the lands so set apart in each case form the district of the association. No person may hold more than two blocks. Commonage lands may only be leased to the association on perpetual lease, and all unleased horticultural blocks are under the control of the association. Every member of each association must provide or contribute towards the maintenance and regulation of irrigation works and the care and cultivation of the commonage lands.

As the Waikerie district was proclaimed an irrigation area under the Irrigation and Reclaimed Lands Acts 1908 and 1909, and the settlers at Kingston have applied to be dealt with under the same Acts, this would leave only the Lyrup Village Settlement, which is in a better position, both financially and as regards population, than the others.

(v.) *Homestead Blocks.* Aboriginal reservations, except those at Point McLeay or Point Pearce, and other suitable lands may be offered as homestead blocks on perpetual lease or lease with a right of purchase. Each block must not exceed £100 in value, and residence by a member of the family for at least nine months of every year is compulsory.

There is now hardly any demand for homestead blocks, persons generally preferring small blocks of repurchased or Crown lands on ordinary conditions. The system appears to be of value only in centres of population where work can be obtained, and within a reasonable distance of a school.

(a) *Advances to Blockholders.* Advances up to £50 may be made by the Commissioner to any homestead blockholder who has complied with the conditions of his lease or agreement, to assist in erecting permanent buildings on the blocks, or other improvements. Advances must be repaid, with interest at 4 per cent. per annum, by twenty equal instalments, commencing twelve months from the date of advance. The Commissioner may, in case of hardship, extend the time of repayment, deferred payments bearing interest at 5 per cent. per annum. The total amount advanced up to the 30th June, 1912, was £40,606, of which £37,876 had been repaid.

(b) *Particulars of Homestead Blocks.* The total number of leases and agreements of which purchase had been completed to the 31st December, 1911, was 1847, comprising 28,082 acres, at a purchase price of £64,414, or an average of £2 5s. 10d. per acre, the average of each holding of which purchase was completed being 15 acres.

7. **Western Australia.**—Under the Agricultural Lands Purchase Act, 1909, which repealed and consolidated the Agricultural Lands Purchase Acts 1896 to 1904, sums not exceeding in the aggregate £400,000 may be expended on the repurchase of Crown lands near the railways, suitable for immediate cultivation.

(i.) *Acquisition of Land by the Government.* For the purpose of carrying out the provisions of the Acts, a Land Purchase Board has been constituted. Advised by the report of the Board, the Minister, with the approval of the Governor, may make a contract for the acquisition of the land by surrender at the price fixed by the Board, or at any lesser price.

(ii.) *Sale of Repurchased Land.* After reservation of part of the repurchased land for public purposes, the remainder is thrown open for selection. The maximum quantity held by one person must not exceed 1000 acres; in special cases 2000 acres.

(iii.) *Conditions of Sale to Selectors.* The maximum selling price of any repurchased land is equal to 105 per cent. of the actual cost of the land plus the cost of any improvements made upon it. A lease for twenty years is issued at a rent, the half-yearly instalments of which are to be at the rate of £3 17s. 9d. for each £100 of the selling price. Improvements must be made to the value of one-fifth of the purchase-money every two years of the first ten years of the lease. One-half of the land must be fenced within the first five years and the whole within ten years. Loans may be granted to selectors under the provisions of the Agricultural Bank Acts.

(iv.) *Areas Acquired and Selected.* The transactions conducted under the provisions of the Agricultural Lands Purchase Acts are shown for 1901 and for each year from 1907 to 1912 in the subjoined table:—

WESTERN AUSTRALIA.—CLOSER SETTLEMENT, 1901, and 1907-8 to 1911-12.*

Year.	Total Area Acquired.	Total Purchase- money.	Roads, Reserves, etc.	Total Area made available for Selection.	Area Se- lected during the Year.	Total Area oc- cupied to Date.	Balance of Area available for Selection.	Total Re- venue received to Date.
	Acres.	£	Acres.	Acres.	Acres.	Acres.	Acres.	£
1901	46,624	52,764	1,459	46,165	4,296	37,235	7,929	14,451
1907-8	170,881	109,373	8,652	162,229	8,201	155,436	6,793	82,030
1908-9	215,822	131,373	11,142	204,680	30,950	189,520	15,531	94,498
1909-10	249,522	158,041	10,757	228,823	25,134	213,416	15,407	111,125
1910-11	297,391	262,302	14,876	282,515	50,032	261,942	20,573	129,386
1911-12	303,469	270,622	14,506	282,985	8,375	264,885	18,000	151,110

* The figures for 1901 are up to 31st December. For 1907-8 and subsequent years they are given as up to 30th June.

On the 30th June, 1912, the total expenditure, exclusive of purchase-money but including interest, was £69,140, which left a balance of £81,970. At the same date the amount invested as sinking fund was £82,285. During the year 1911-12 one property, viz., that of Jelcobine, having a total area of 6078 acres, was purchased, but has not yet been made available for selection.

(v.) *Working Men's Blocks.* Any person not already holding land within the State is entitled to obtain a lease of lands which have been surveyed and thrown open for selection as working men's blocks. The maximum area that may be selected by one person is, if within any town or goldfield, half an acre, or five acres elsewhere. The price is not less than twenty shillings per acre, payable in ten years by half-yearly instalments. Residence and improvement conditions must be fulfilled. At the expiration of the lease, or at any time after five years from the date of the commencement of the lease, upon compliance with all conditions and upon payment of the full purchase-money and fee, a Crown grant will be issued. No person who has once held a working-man's block is allowed to select another, except under very special circumstances.

The following table shows the number and area of accepted applications for working men's blocks during each year, as well as the total number and area in existence at the end of the year 1901 and for each year from 1907 to 1912:—

**WESTERN AUSTRALIA.—PARTICULARS OF WORKING MEN'S BLOCKS,
1901 and 1907-12.**

Year ...	1901.	1907.	1908.	1909.	1910.	1911.	1912.
NUMBER AND AREA OF ACCEPTED APPLICATIONS DURING YEAR.							
Number	2	201	91	88	122	53	28
Area in Acres	6	149	131	189	148	99	56
NUMBER AND AREA OF BLOCKS OCCUPIED AT END OF YEAR.							
Number	7	401	387	408	440	388	327
Area in Acres	31	489	537	667	719	722	688

1. For financial year ended 30th June.

During the years 1907 to 1911 residential blocks on the goldfields were made available as workingmen's blocks, instead of under residential lease, as before, and since 19th October, 1911, the system of leasehold has been reverted to.

8. *Tasmania.*—The principles of closer settlement were not introduced into Tasmania until the Closer Settlement Act of 1906 was passed. Under this Act, which was amended in 1908, and again in 1911, power is given to the Minister for Lands, on the recommendation of the Closer Settlement Board, to purchase by agreement private land in any part of Tasmania for the purpose of closer settlement, and also to deal with and dispose of any unoccupied Crown land for the same purpose.

(i.) *Disposal of Land.* Lands so brought under the Act are subdivided into farm allotments of a suitable size—not exceeding £1500 in value—and are disposed of by way of lease for ninety-nine years. The rental is determined by the Board at a rate not exceeding 5 per cent. per annum on the capital value of the land. Any lessee who has fulfilled the conditions under the Act may, after the expiration of ten years of the term of the lease, purchase the land leased to him. Under the Amendment Act of 1908 the Minister is authorised to lease any allotment of land exceeding £1500, but not exceeding £4000 in value, exclusive of buildings.

A lessee must improve his holding to a value equal to $2\frac{1}{2}$ per cent. on the capital value of the land in each of the first ten years of the term of his lease, and he must, within two years of the date of the lease, personally reside on his allotment during at least eight months of each of the following nine years.

Under the Amendment Act of 1911, provision is made for reserving a proportion of the allotments thrown open, and leasing the same, under special terms and conditions, to *bonâ fide* immigrants.

(ii.) *Advances to Settlers.* The total advance by the Government in aid of the cost of effecting improvements to any one lessee must not exceed one-fifth of the capital value of such lessee allotment, and must not exceed pound for pound the sum expended by him in fencing and building. Such advances must be repaid, together with interest at 5 per cent., in equal half-yearly instalments.

(iii.) *Special Sales.* The fee-simple of land acquired may be disposed of by sale on the recommendation of the Board as sites for churches, public halls, dairy factories, fruit-preserving factories, mills, or creameries. The area sold may not exceed one acre in the case of a church or public hall, or five acres in other cases.

(iv.) *Areas Acquired and Selected.* Up to the 30th June, 1912, eight areas, viz., Cheshunt, Mount Pleasant, Forester, No. 1 and No. 2, Isandula, Brinktop, Frogmore and Woolmers had been opened up for closer settlement. Particulars are given in the following statement :—

TASMANIA.—CLOSER SETTLEMENT, 1907 to 1912.

Year.	Number of Farms made Available.	Number of Farms Allotted.	Area of Farms Allotted.	Rental of Farms Allotted.	Total Area Purchased.
			Acres.	£	Acres.
1907	61	54	10,865	1,923	13,397
1908	28	26	8,191	634	11,780
1909	49	45	9,117	789	7,902
1910	9	15	1,872	539	1,362
1911	37	36	4,965	168	5,143
1912	11	7	3,912	563	6,147
Total	195	183	38,422	4,616	45,731

The total purchase-money paid by the Government up to the 30th June, 1912, was £118,511.

§ 9. Occupation of Crown Lands under Leases and Licenses Issued by Mines Departments.

1. *Introduction.*—Leases and licenses for the occupation of Crown lands for mining and other purposes are issued by the Mines Departments in all the States. Such leases and licenses may be issued with respect to all Crown lands, whether otherwise unoccupied or whether occupied also under leases and licenses issued by the Lands Departments. Certain Crown lands, such as reserves, etc., are, however, subject to special conditions.

(i.) *Mining on Private Lands.* Certain of the Crown lands of the several States have been alienated from time to time, subject to various reservations in respect of gold and other minerals which might afterwards be found therein. Other lands have been alienated without such reservation, but as the mineral gold does not pass from the Crown unless by express conveyance, it has remained the property of the State on all alienated lands. All lands alienated or in process of alienation are open to mining for gold; but to mining for other minerals, those lands only are open in respect of which the rights are reserved in the grants. There are, however, generally certain reservations, such as those with reference to town or village lands and lands which have been built on or are used for special purposes. The working of minerals on private lands is regulated in the several States either by special Acts or by special provisions of the Acts relating to mining.

(ii.) *Leases and Licenses Issued and Total Areas of Crown Lands Occupied, 1901 to 1911.* The following tables shew the total areas of Crown lands for which leases and licenses for mining purposes were issued in each State during 1901 and for each year from 1907 to 1911 inclusive, and also the total areas of Crown lands occupied for mining purposes at the end of each year during the same period:—

**CROWN LANDS, LEASES AND LICENSES FOR MINING PURPOSES, 1901 and
1907 to 1911.**

Particulars.	N.S.W.	Victoria. ¹	Qld. ²	S. Aust. ³	W. Aust.	Tas.	Swth.
AREAS FOR WHICH LEASES AND LICENSES ISSUED.							
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901	50,349	...	55,698	93,985	37,593	18,125	255,750
1907	96,159	67,048	25,333	136,312	51,514	31,255	407,621
1908	81,418	42,716	35,834	69,202	57,093	20,546	306,809
1909	72,696	36,114	43,591	49,135	55,133	20,414	277,083
1910	31,674	38,655	41,687	216,273	87,429	24,173	439,891
1911	42,865	25,353	40,642	59,918	94,853	26,454	290,085
TOTAL AREA OCCUPIED AT END OF YEAR.							
		Not available					
1901	134,209		124,182	14,140	66,682	50,362	389,575
1907	183,916		123,321	170,204	117,361	79,163	673,965
1908	218,931		140,785	100,387	130,970	56,693	647,716
1909	236,265		147,010	84,293	128,129	55,819	651,516
1910	235,235	136,710	164,737	197,714	164,963	57,908	957,267
1911	233,030	116,420	180,663	89,077	158,946	58,038	836,174

1. Including private lands, leases, and water right licenses only. 2. Exclusive of lands held under miners' rights only, amounting in 1908 to approximately 27,500 acres. 3. Exclusive of miners' rights. 4. Excluding Victoria, except for 1910 and 1911.

The increase in the area held during 1903 is due to the unusually large number of search licenses issued in South Australia during the year, no less than 466 being registered with areas varying from 640 to 3200 acres each.

2. **New South Wales.** Under the provisions of the Mining Act 1906 and the regulations made thereunder, Crown lands may be occupied for mining or other purposes by virtue of (i.) miners' rights; (ii.) business licenses; (iii.) authorities to prospect; or (iv.)

leases.

(i.) *Miners' Rights.* A miner's right may be issued for any term not less than six months and not exceeding twenty years from the date of issue, at a fee calculated at the rate of two shillings and sixpence for every half-year of the term. The holder is entitled to take possession of and exclusively occupy for mining purposes Crown lands not expressly exempted from such occupation. Areas so occupied are styled tenements, which are divided into nine classes, viz. :—(a) prospecting areas; (b) dams or reservoirs; (c) roads; (d) claims; (e) races; (f) machinery areas; (g) tramways; (h) water rights; and (i) tunnel sites. Any holder of a miner's right may occupy one tenement of any or each of the foregoing classes, but for every additional tenement of the same class he must hold an additional miner's right. The holder of a miner's right may, in addition to the above, occupy a residence area not exceeding one-quarter acre within the boundaries of a town or village, or two acres outside such boundaries.

(ii.) *Business Licenses.* A business license may be issued for any term not less than six months and not exceeding twenty years at a fee calculated at the rate of ten shillings for every half-year of the term. It entitles the holder to occupy as a business area not more than one-quarter acre within the boundaries of a town or village, or one acre outside such boundaries.

(iii.) *Authorities to Prospect.* Under the Mining Act 1906, the Minister for Mines may grant to the holder of a miner's right an authority to prospect upon any area of Crown lands, whether exempted from ordinary occupation under a miner's right or not. These authorities are protective titles during prospecting operations only, and do not authorise mining.

(iv.) *Leases.* The Governor may grant leases of Crown lands for (a) mining, (b) mining purposes, or (c) dredging.

(a) *Mining Leases.* These leases may be either *gold-mining leases*, for which the rental is at the rate of five shillings per acre per annum, the maximum area which may be demised being twenty-five acres; *mineral leases* (other than coal or shale), for which the rental is at the rate of five shillings per acre per annum, the maximum area being eighty acres; *coal or shale leases*, for which the rental is at the rate of one shilling per acre per annum, with a royalty of sixpence per ton on all shale or large coal, and threepence per ton on all small coal raised, the maximum area being 640 acres. *Special leases* may be granted for gold or minerals, other than shale or coal, if by reason of unusual circumstances the Minister is of the opinion that it is necessary that an area in excess of the limit prescribed for ordinary leases should be leased.

(b) *Leases for Mining Purposes* are granted for the surface of the land and to a limited depth below the surface. Such leases do not authorise mining on the land, but are for such purposes as the construction of dams and reservoirs, tramways, buildings, and machinery.

(c) *Dredging Leases* may be granted for the purpose of mining for gold or any other mineral by dredging, pumping, sluicing, etc., on any Crown lands forming the bed of any river or other suitable land. The rent is two shillings and sixpence per acre per annum, and a royalty of 1 per cent. on the value of all gold and other minerals won must be paid to the Crown. Labour and capital expenditure conditions are attached to dredging leases.

(v.) *Particulars of Leases and Licenses Issued, 1911.* The following table gives particulars of leases and licenses of Crown lands issued by the Mines Department during the year 1911:—

NEW SOUTH WALES.—LEASES AND LICENSES.
ISSUED BY MINES DEPARTMENT DURING YEAR 1911.

Particulars.	Act under which Issued.	Purpose for which Issued.	Area.
<i>Leases—</i>	Mining Act 1874 & amending Acts	To mine for—	Acres.
	Mining Act 1906	Minerals other than coal	2,793
		Coal	3,060
		Gold	6,896
		Minerals other than coal	16,784
		Coal	241
	Gold & Mineral Dredging Act 1899	Leases (mining purposes)	...
		Gold	...
	Mining Act 1906 (Dredging)	Minerals other than gold	648
		Gold	874
<i>Licenses—</i>	Mining Act 1874 (section 28)	Coal and shale...	...
<i>Other forms of</i>	Mining Act 1874 & amending Acts	Sites for dams, machinery, etc.	...
<i>occupancy—</i>	Mining Act 1906	Authorities to prospect...	11,569
Total			42,865

It may be remarked that the Mining Act 1874 has now been repealed, so that no further authorities will be issued under that Act.

(vi.) *Leases and Licenses Issued and Areas Occupied.* The following table gives particulars of the areas of Crown lands for which leases and licenses were issued by the Mines Department during each year, and of the total areas of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1907 to 1911, inclusive:—

NEW SOUTH WALES.—LEASES AND LICENSES.
ISSUED BY MINES DEPARTMENT, 1901 AND 1907-1911.

Purposes for which Issued or Occupied.	1901.	1907.	1908.	1909.	1910.	1911.
LEASES AND LICENSES ISSUED.						
Gold mining	Acres. 2,272	Acres. 1,468	Acres. 4,131	Acres. 5,243	Acres. 6,412	Acres. 3,708
Mining for other minerals	47,990	93,796	37,237	41,008	16,493	27,347
Authorities to prospect	...	...	38,890	25,481	8,107	11,569
For other purposes	87	900	1,160	964	662	241
Total	50,349	96,159	81,418	72,696	31,674	42,865
TOTAL AREAS OCCUPIED.						
Gold mining	6,942	5,669	11,456	16,079	18,917	15,455
Mining for other minerals	126,885	176,558	192,178	190,153	199,497	213,209
Authorities to prospect	...	...	13,239	28,287	12,441	...
For other purposes	382	1,689	2,058	1,746	4,380	4,366
Total	134,209	183,916	218,931	236,265	235,235	233,030

3. **Victoria.**—Leases of Crown lands for mining and auxiliary purposes in this State are issued by the department of Mines and Forests under the Mines Act 1890 to 1907. Miners' rights are issued by the Treasury under the authority of the same Acts.

(i.) *Mining Leases.* These are of three kinds—(a) Gold-mining leases; (b) mineral leases; and (c) dredging leases. (a) *Gold-mining Leases* are granted for a term of fifteen years in such areas as the Minister may recommend. The annual rent is two shillings.

and sixpence an acre. (b) *Mineral Leases* are granted for a term of 15 years, the maximum area being 640 acres. The annual rent varies from one shilling to £1 per acre. (c) *Dredging Leases* are issued upon the recommendation of the Sludge Abatement Board and on the approval of the Minister. The annual rent is five shillings an acre.

(ii.) *Special Licenses.* Special licenses are also granted by the Department of Mines and Forests. (a) *Searching Licenses* are granted to search for minerals over Crown lands for a term of three months at a minimum rent of £1. (b) *Tailings Licenses* are issued over tailings, which have become the property of the Crown, for a term of five years at a rent of one penny per 100 cubic yards, the minimum rent being ten shillings. (c) *Water-right Licenses* are issued, to divert water by cutting races, etc., over Crown lands, for a term of fifteen years, at a rent fixed according to the length of race, the quantity of water diverted, and the size of the reservoir.

(iii.) *Miners' Rights, Business Licenses, and Residence Areas.* Miners' rights are issued by the Treasury Department upon payment of a fee of two shillings and sixpence, and are available for a period of twelve months. The holder is entitled to take possession for mining purposes of Crown lands, not otherwise exempted, in any mining district. Upon registration and payment of the prescribed fees, the holder of a miner's right may occupy not more than one acre of Crown lands on any goldfield as a business or residence area.

Licenses of auriferous lands not for mining purposes may be issued by the Lands Department. (§ 7, 3 iv.)

(iv.) *Leases and Licenses Issued and Areas Occupied for Mining.* Particulars of leases and licenses for mining purposes of Crown lands alone are not available, the official returns including also private lands. During the year 1911 the number of mining leases, licenses, etc., issued was 508, covering an area of 25,353 acres; the rent, fees, etc., received amounted to £2268. No particulars are available as to the total area of either Crown or private lands occupied for mining purposes.

4. **Queensland.**—The occupation of the Crown lands for mining purposes in this State is regulated by the Mining Acts 1898 to 1902. Under these Acts the Department of Mines is authorised to issue—(i.) Miners' rights; (ii.) mining leases; (iii.) coal-mining leases and licenses; and (iv.) miners' homestead leases.

(i.) *Miners' Rights.* The foundation of title under a miner's right is prior appropriation, and the permanency of any such title depends upon compliance by the occupier with certain prescribed conditions of use and working. The ground occupied under a miner's right is known as a "claim," which term may include an area taken up for purposes auxiliary to the actual operation of mining, such as machine areas. Water rights and residence areas do not come within the definition of "claims," being licenses which may be granted or refused. The forfeiture of a claim on account of non-compliance with the prescribed conditions may be decreed by the Warden on the application of any holder of a miner's right. The forfeiture of water rights or of residence areas may be declared only by the Crown, who alone can challenge the title of the occupier.

(ii.) *Mining Leases.* These leases are divided into two classes—(a) Gold-mining leases, and (b) mineral leases. Both classes contain certain covenants as to rent, the employment of labour and other matters. Special leases may be granted for auxiliary purposes, such as constructing tramways, erecting buildings, cutting water-races, etc. (a) *Gold-mining Leases.* The maximum area is fifty acres, the term twenty-one years, renewable for a further term of like duration, and the annual rent is £1 an acre. (b) *Mineral Leases.* The maximum area is 160 acres (except for coal, as mentioned hereinafter), the term being twenty-one years, renewable for a like period, and the annual rent ten shillings an acre.

(iii.) *Coal-mining Leases and Licenses.* Mineral leases for coal may be granted for a term of twenty-one years at an annual rent of sixpence an acre, together with a royalty

of threepence per ton of coal raised during the first ten years of the lease and of sixpence per ton during the remainder of the term. Special concessions may be granted to discoverers of payable seams of coal. Licenses to occupy not more than 640 acres may be granted to any person desiring to prospect Crown lands for coal upon payment of sixpence for every acre comprised in the application.

(iv.) *Miners' Homestead Leases.* These leases are issued to holders of miners' rights who reside on gold or mineral fields, for the purpose of residence or carrying on business, and range in area from one to eighty acres, in accordance with the proximity to a proclaimed township. The rent ranges from sixpence to five shillings an acre. In the case of homesteads situated outside the limits of a township, after thirty years' rent has been paid the rent ceases to be payable, and in lieu thereof the rent shall be one shilling, if demanded.

(v.) *Particulars of Leases and Licenses Issued, 1911.* The subjoined table gives particulars of the leases and licenses of Crown lands issued for mining purposes during the year 1911:—

QUEENSLAND.—LEASES AND LICENSES.

ISSUED BY MINES DEPARTMENT DURING YEAR 1911.

Lease or License.	Mining Leases				Miners' Homestead Leases.	Coal Prospecting Licenses.	Miscellaneous Rights & Licenses.
Purpose for which issued	To mine for gold	To mine for minerals other than gold	Tramways	Buildings and machinery	Residence, business, etc.	To prospect for coal	Mining, residence, etc.
Area in acres...	532	2,692	...	23	6,360	31,057	*25,000

* Approximate.

(vi.) *Particulars of Areas Occupied.* The following table shews the areas for which leases and licenses of Crown lands were issued during each year, and the total area occupied at the end of the year 1901 and from 1907 to 1911 inclusive.

The particulars given are exclusive of miners' rights.

QUEENSLAND.—LEASES AND LICENSES.

ISSUED BY MINES DEPARTMENT, 1901 AND 1907-1911.

Particulars.	1901.	1907.	1908.	1909.	1910.	1911.
* LEASES AND LICENSES ISSUED DURING YEAR.						
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining ...	3,581	2,333	1,800	1,668	1,306	532
Mining for other minerals ...	7,142	7,598	5,004	2,878	3,105	2,715
For other purposes ...	44,975	15,402	29,030	39,045	37,276	37,417
Total ...	55,698	25,333	35,834	43,591	41,687	40,664

* TOTAL AREA OCCUPIED AT END OF YEAR.

Gold mining ...	11,296	10,562	8,860	8,590	8,082	7,820
Mining for other minerals ...	23,113	33,021	27,691	20,292	25,188	24,895
For other purposes ...	89,773	79,738	104,184	118,128	131,467	138,363
Total ...	124,182	123,321	140,735	147,010	164,737	171,078

* Exclusive of lands held under miners' rights only.

5. **South Australia.**—In this State leases and licenses for mining purposes are issued by the Department of Mines under the authority of the Mining Act 1893, as amended in 1900. Under these Acts mining and prospecting are permitted in virtue of (i.) miners' rights; (ii.) mining leases; (iii.) coal or oil leases; and (iv.) miscellaneous leases, and in addition occupation of Crown lands is permitted by virtue of (v.) business claims, and (vi.) occupation licenses.

(i.) *Miners' Rights.* These rights are issued for a period of one year upon payment of five shillings. The holder is authorised to prospect for any mineral or oil, and to peg out a claim in the prescribed manner on any Crown lands. Under the Amendment Act of 1900, special licenses to search, on specific mineral lands not exceeding five square miles in extent, may be granted for (a) precious stones; (b) mineral phosphates; (c) oil; and (d) rare metals, minerals, and earths, the mining for which has not proved payable in any portion of the State.

(ii.) *Mining Leases.* These leases are of two classes—(a) Gold leases and (b) mineral leases. (a) *Gold Leases* may be issued for a term not exceeding forty-two years to holders of miners' rights at an annual rent of one shilling an acre. The maximum area which may be so leased is twenty acres. (b) *Mineral Leases* may be issued to holders of miners' rights for lands not comprised in a goldfield. The area leased may not exceed forty acres, nor the term forty-two years. The annual rent is one shilling an acre, together with a royalty of sixpence in the pound on the net profits.

(iii.) *Coal or Oil Leases.* These leases are issued to holders of miners' rights for Crown lands not comprised in goldfields. The maximum area is 640 acres, and the maximum term forty-two years. The rent and conditions are as prescribed. In addition to the rent a royalty of sixpence in the pound on the net profits must be paid.

(iv.) *Miscellaneous Leases.* Leases for any term not exceeding forty-two years may be granted to holders of miners' rights on the prescribed terms and conditions (a) for manufacturing or obtaining salt or gypsum; (b) as sites for smelting or mining works. The maximum area, if the land leased is on a water frontage, is twenty-one acres. A royalty of sixpence in the pound on the net profits must be paid.

(v.) *Business Claims.* Business licenses are granted on payment at the rate of ten shillings for six months, entitling the holder to peg out and occupy for business and residential purposes a claim not exceeding a quarter of an acre in extent, if within a township, or one acre on other lands.

(vi.) *Occupation Licenses.* Licenses are granted authorising the holder to occupy, for purposes of residence and cultivation, any Crown lands not exceeding half an acre in extent for a term of fourteen years at an annual rent not exceeding two shillings an acre.

(vii.) *Particulars of Leases and Licenses, 1911.* The following table gives particulars of leases and licenses of Crown lands issued by the Mines Department during the year 1911:—

SOUTH AUSTRALIA.—LEASES AND LICENSES.

ISSUED BY THE MINES DEPARTMENT DURING YEAR 1911.

Particulars.	Act under which Issued.	Purpose for which Issued.	Area.
			Acres.
Leases ...	Mining Act 1893 ...	To mine for—	
Mineral claims		Gold and other metals and miner's	1,968
Licenses	Mining Act Amendment Act 1900	To search for precious stones, mineral phosphates, oil, rare metals, minerals, and earths, the mining for which has not proved payable in any portion of the State	5,470
Other forms of occupancy	Mining Act 1893 ...		51,840
			640
Total			59,918

(viii.) *Leases and Licenses Issued and Areas Occupied.* The following table gives particulars of the areas of Crown lands for which leases and licenses were issued by the Mines Department during each year, and of the total area of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1907 to 1911 inclusive:—

SOUTH AUSTRALIA.—LEASES AND LICENSES.

ISSUED BY MINES DEPARTMENT, 1901 AND 1907 TO 1911.

Particulars.	1901.	1907.	1908.	1909.	1910.	1911.
LEASES AND LICENSES ISSUED.*						
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	1,377	370	306	334	145	340
Mining for other minerals	92,587	135,897	68,896	48,799	216,128	59,578
For other purposes	21	45	...	2	...	...
Total	93,985	136,312	69,202	49,135	216,273	59,918

TOTAL AREAS OCCUPIED.*

Gold mining	14,140	7,952	2,490	2,374	1,353	1,512
Mining for other minerals ... ..	...	162,113	97,780	81,811	196,256	87,459
For other purposes ... ..	...	139	117	108	105	106
Total	14,140	170,204	100,387	84,293	197,714	89,077

* Exclusive of miners' rights.

The following table shows the total area occupied (exclusive of miners' rights) at the end of the year 1911, classified according to the nature of the holding:—

SOUTH AUSTRALIA.—TOTAL AREA HELD UNDER MINING ACTS, 1911.

Nature of Holding.	Number.	Area.	Nature of Holding.	Number.	Area.
		Acres.			Acres.
Mineral leases	258	13,139	Search licenses	50	52,620
Gold leases	80	1,500	Coal and oil claims	5	3,200
Gold dredging leases ... ..	...	...	Gold claims	5	12
Miscellaneous leases	41	8,000			
Mineral claims	320	10,500			
Occupation licenses	212	106	Total	971	89,077

6. **Western Australia.**—The issue of leases and licenses by the Mines Department is regulated by the Mining Act 1904. Under this Act Crown lands may be occupied by virtue of (i.) Miners' rights; (ii.) mining leases; and (iii.) miners' homestead leases.

(i.) *Miners' Rights.* Any holder of a miner's right may take up and occupy ground, subject to the approval of the Warden, for the following purposes:—Prospecting for any minerals; claims, water rights, residence and business areas, and machinery, tailings,

washing, or market garden areas. Lands may be occupied by the holder of a miner's right for the purpose of mining for alluvial gold without registration, the only restriction being that the occupier must peg out his holding according to the prescribed regulations.

(ii.) *Mining Leases.* These leases are granted for mining and auxiliary purposes, and are of three descriptions, viz.:—(a) Gold-mining leases; (b) mineral leases; and (c) coal leases. (a) *Gold-mining Leases.* The maximum area is twenty-four acres, except in the case of a mine which has already been worked and abandoned, is excessively wet, or requires costly appliances, when the maximum area is forty-eight acres. (b) *Mineral Leases.* The maximum area is forty-eight acres, except under the special circumstances referred to in the case of gold-mining leases, when the maximum area is ninety-six acres. (c) *Coal Leases.* The maximum area is 320 acres, but special leases of larger areas may be granted to the discoverer of a payable seam.

(iii.) *Miners' Homestead Leases.* These leases are granted for agricultural purposes on land within goldfields. The area is restricted to twenty acres, if within two miles of a township, and if beyond that distance to 500 acres. Improvement conditions are imposed.

(iv.) *Particulars of Leases and Licenses Issued, 1911.* The following table gives particulars of mining leases and licenses of Crown lands issued during 1911:—

**WESTERN AUSTRALIA.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT,
1911.***

Particulars.	Gold-Mining.	Minerals other than Gold.	Miners' Homesteads.	Miscellaneous.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.
Leases	32,143	1,002	7,147	90	40,382
Licenses	15,242	39,083	...	146	54,471

* Exclusive of miners' rights.

(v.) *Particulars of Areas Occupied.* The following table shews the areas for which leases and licenses of Crown lands were issued during each year, and the total area occupied at the end of the year 1901, and from 1907 to 1911 inclusive:—

WESTERN AUSTRALIA.—LEASES AND LICENSES.

ISSUED BY MINES DEPARTMENT, 1901 AND 1907-1911.

Particulars.	1901.	1907.	1908.	1909.	1910.	1911.
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LEASES AND LICENSES ISSUED DURING YEAR.*

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	17,454	28,050	26,898	32,092	32,365	47,385
Mining for other minerals	19,281	15,985	22,293	14,843	51,008	40,085
For other purposes	858	7,479	7,902	8,198	4,056	7,383
Total	37,593	51,514	57,093	55,133	87,429	94,853

* Exclusive of miners' rights.

WESTERN AUSTRALIA.—LEASES AND LICENSES—(Continued.)

Particulars.	1901.	1907.	1908.	1909.	1910.	1911.
TOTAL AREA OCCUPIED AT END OF YEAR.*						
Gold mining	40,525	46,374	40,591	41,521	44,157	44,168
Mining for other minerals	14,091	41,470	55,244	45,229	78,838	70,944
For other purposes	12,066	29,517	35,135	41,379	41,968	43,839
Total	66,682	117,361	130,970	128,129	164,963	158,946

* Exclusive of miners' rights.

7. **Tasmania.**—Under the provisions of the Mining Act 1905, Crown lands in this State may be occupied for mining and auxiliary purposes by virtue of (i.) prospectors' licenses; (ii.) miners' rights; (iii.) mining leases; and (iv.) miscellaneous licenses. Business and residence licenses within mining areas may be issued by the Lands Department. (See § 7, 8 iv.)

(i.) *Prospectors' Licenses.* These licenses are granted for the calendar year in which they are applied for, upon payment of the sum of ten shillings if applied for before the 30th June, or five shillings if after that date. They confer the right to prospect upon prescribed Crown lands, and any discoveries made may be protected in the prescribed manner.

(ii.) *Miners' Rights.* These rights are also issued each year upon payment of five shillings if applied for before the 30th June, or of two shillings and sixpence if after that date. They confer the right to occupy specified Crown lands and to mine thereon.

(iii.) *Mining Leases.* Mining leases are of three kinds—(a) gold-mining leases; (b) mineral leases; and (c) miscellaneous leases. (a) *Gold-mining Leases* are granted for a term not exceeding twenty-one years at an annual rent of £1 an acre. The maximum area which may be so leased is forty acres. The lessee has the exclusive right to mine for gold and other minerals on the land demised. (b) *Mineral Leases* are issued for mining for minerals other than gold on areas not exceeding eighty acres for a term of not more than twenty-one years, at an annual rent of five shillings an acre. Leases to mine for coal, shale, slate, freestone, or limestone may be issued for areas not exceeding 320 acres at an annual rent of two shillings and sixpence an acre. (c) *Miscellaneous Leases.* The Minister may grant leases for mining purposes, for a term not exceeding ten years, of the bed or banks of any river flowing through Crown lands, at a rent of five shillings an acre. The area leased may not exceed forty chains in length by five chains on either side from the centre of the river. Special leases may be granted by the Governor upon resolutions assenting thereto passed by both Houses of Parliament.

(iv.) *Miscellaneous Licenses.* Licenses granting easements for various purposes may be issued, for a term not exceeding twenty-one years, to persons holding mining leases or miners' rights, for the more advantageous working of the land occupied.

(v.) *Particulars of Leases and Licenses Issued, 1911.* The following table shews particulars of leases and licenses of Crown lands, exclusive of prospectors' licenses and miners' rights, issued by the Mines Department during the year 1911 :—

TASMANIA.—LEASES AND LICENSES.

ISSUED BY THE MINES DEPARTMENT DURING 1911.¹

Particulars.	Act under which Issued.	Purpose for which Issued.	Area.
<i>Leases—</i>		To mine for—	Acres.
1	The Mining Act 1905	Barite	10
8	"	Coal	2,107
29	"	Copper	1,041
60	"	Gold	737
1	"	Guano	2
2	"	Iron	76
3	"	Limestone	314
99	"	Minerals	6,735
1	"	Ochre	80
1	"	Pyrites	20
18	"	Silver lead	761
39	"	Shale	7,489
189	"	Tin	5,940
9	"	Wolfram	372
<i>Licenses—</i>			
7	"	Machinery sites	29
9	"	Mining easements	40
23	"	Dredging claims	369
70	"	Dam sites and water rights	332
Total 569			26,454

1. Exclusive of prospectors' licenses and miners' rights, which are issued by officers in different districts throughout the State, and as to which particulars are not available.

(vi.) *Leases and Licenses Issued and Areas Occupied.* The following tables give particulars of the areas of Crown lands for which leases and licenses (exclusive of prospectors' licenses and miners' rights) were issued during each year, and of the total area of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1907 to 1911 inclusive:—

TASMANIA.—LEASES AND LICENSES.

ISSUED BY MINES DEPARTMENT, 1901 AND 1907 TO 1911.*

Particulars.	1901.	1907.	1908.	1909.	1910.	1911.
LEASES AND LICENSES ISSUED.*						
Gold mining	Acres. 1,067	Acres. 1,056	Acres. 946	Acres. 998	Acres. 448	Acres. 737
Mining for other minerals	17,058	29,188	19,137	19,114	23,669	25,316
For other purposes	—	1,011	463	302	56	401
Total	18,125	31,255	20,546	20,414	24,173	26,454
TOTAL AREAS OCCUPIED.*						
Gold mining	3,894	2,671	1,344	1,265	1,159	1,220
Mining for other minerals	46,968	73,009	52,844	52,939	55,050	55,007
For other purposes	—	3,483	2,505	1,615	1,599	1,811
Total	50,862	79,163	56,693	55,819	57,908	58,038

* See note to preceding table.

§ 10. Resumption by Crown of Alienated Lands.

1. **General.**—Under various Acts, alienated lands may be compulsorily resumed by the Crown in the several States for certain purposes, generally connected with works of a public nature. Resumptions for closer settlement purposes have already been referred to (see § 8, above). In most of the States there are Lands Clauses or similar Acts providing the machinery, and indicating the procedure to be adopted in assessing the compensation to be paid by the Crown to private owners in cases where the parties have failed to agree as to the amount to be paid. The provisions of these Acts are generally incorporated in the special Acts specifying the purposes for which alienated lands may be resumed. Lands leased for pastoral purposes may generally be resumed by the Crown on short notice. The lessee is ordinarily entitled to compensation for land resumed, for loss or depreciation in value of the lease caused by such resumption, and for improvements.

(a) *New South Wales.* Alienated lands may be recovered by the Crown for authorised works and certain public purposes under the provisions of the Public Works Act 1900, and in other cases may be acquired by the Crown by purchase, gift, or surrender under Executive authority. Alienated lands required for public roads may be resumed under the Public Roads Act 1902, and if containing gold may be resumed for mining under Section 72 of the Mining Act 1906. Lands dedicated or granted by the Crown for public purposes may be resumed under Section 105 of the Crown Lands Act 1884, Section 41 of the Crown Lands Act 1889, and Section 1 of the Public Trusts Act 1897. Surrender and exchange of lands alienated or in process of alienation may be carried out under Section 47 of the Crown Lands Act 1895.

(b) *Victoria.* In Victoria lands may be resumed in accordance with the provisions of the Lands Compensation Act 1890, the Public Works Act 1890, the Railways Acts, the Land Act 1901, the Local Government Act 1903, the Water Act 1905, the Vacant Unclaimed Lands Act 1906, and the Forests Act 1907.

(c) *Queensland.* In this State alienated lands may be resumed under the provisions of the Public Works Land Resumption Act 1906, for any of the purposes specified in section 4 of that Act.

(d) *South Australia.* In this State the principal Acts under which land is repurchased for public works are the Railways Commissioners Act 1887, the Water Conservations Acts 1886, 1889, and 1900, the Waterworks Act 1882, and the Sewers Act 1878.

(e) *Western Australia.* In Western Australia private lands may be resumed under the provisions of the Land Act 1898, the Roads Act 1902, and the Public Works Act 1902.

(f) *Tasmania.* In the greatest number of cases private lands have been resumed in this State for the purpose of roads by agreement under the Lands Vesting Act 1894 and the Roads Acts, which were to a large extent repealed and consolidated by the Local Government Act 1906. In case of the owners failing to agree as to price, the land is acquired under the Lands Clauses Act 1857, incorporated in the Public Works and the Crown Land Acts. The Lands Resumption Acts 1891 and 1892 provide for the compulsory acquisition of land without waiting for the usual formalities. Under that Act a notification may be given to the owner that the land is required; after the expiration of thirty days the land may be resumed by notification in the *Gazette*, the amount of purchase-money being afterwards decided by arbitration, as provided by the Lands Clauses Act. A Bill amending and consolidating the Land for Public Purposes Act 1884, and the Lands Resumption Acts 1891 and 1892, was passed by the House of Assembly in August, 1910.

2. **Areas Resumed, 1901 to 1911.**—The subjoined table shews, so far as particulars are available, the areas of private lands resumed, exclusive of resumptions for closer settlement purposes, in each State during each year from 1901 to 1911 inclusive:—

AREAS OF PRIVATE LANDS RESUMED BY THE CROWN

(EXCLUSIVE OF RESUMPTIONS FOR CLOSER SETTLEMENT), 1901 TO 1911.

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.†
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901	7,864	52	26	†	91	120	8,153
1902	8,392	18	2	†	30	150	8,592
1903	10,275	2,787	...	†	...	160	13,222
1904	6,591	3,337	...	†	...	210	10,138
1905	6,173	2,653	...	†	...	184	9,010
1906	20,875	665	...	†	...	200	21,740
1907	10,511	1,930	76	†	...	252	12,769
1908	6,041	†	1,346	†	2,457	16	†
1909	3,020	†	122	†	†	212	†
1910	3,878	†	92	†	†	544	†
1911	2,169	†	...	†	...	690	†

* Exclusive of resumptions for railway purposes, which for the years 1901 to 1906, inclusive amounted to 13,061 acres. † Not available. ‡ Exclusive of South Australia.

§ 11. Alienation and Occupation of Crown Lands in the Several States.

1. **Introduction.**—The tables given in the previous parts of this section shew separately the areas alienated, in process of alienation, and occupied under various tenures in the several States. The tables given below shew collectively the general condition of the public estate in each State, having regard to (a) the area alienated absolutely, which includes free grants, sales, and conditional purchases for which grants have been issued, the conditions having been complied with; (b) the area in process of alienation, comprising holdings for which the fee-simple has not yet been alienated, but which are in process of sale under systems of deferred payments; (c) the area occupied under all descriptions of leases and licenses; and (d) the area unoccupied, which, ordinarily, includes roads, permanent reserves, forests, etc. In some cases, however, lands which are permanently reserved from alienation are occupied under leases and licenses, so that in such cases the areas reserved are comprised in class (c) and not in class (d). Particulars of leases and licenses of reserved areas, as distinguished from leases and licenses of other lands, are not available. It should be observed that in many cases lands occupied under leases or licenses for pastoral purposes are held on short tenures only, and could thus be made available for settlement practically whenever required.

2. **New South Wales.**—The total area of the State of New South Wales (exclusive of Commonwealth Territory) is 198,054,420 acres, of which on the 30th June, 1912, 39,211,268 acres, or nearly one-fifth were alienated absolutely; 17,341,434 acres, or over one-eleventh were in process of alienation; 126,064,081 acres, or about three-fifths, were occupied under Lands Department, Western Land Board, or Mines Department leases and licenses; and the remaining 15,437,687 acres, or about one-eleventh, were unoccupied. The next table shews the areas alienated, in process of alienation, held under leases and licenses, and unoccupied, in 1901 and from 1908-9 to 1911-12.

During the year 1911-12, a total area of 1,527,114 acres became available for homestead selection, and settlement lease, crown leases, homestead farms and suburban and additional holdings. Of this area, 345,057 acres were made available for additional holdings only, so as to enable selectors with insufficient areas to increase their holdings, and 85,442 acres were made available for closer settlement purchase.

NEW SOUTH WALES.—ALIENATION AND OCCUPATION OF CROWN LANDS,

1901 and 1908-1912.*

Particulars.	Area in Acres.				
	1901.	1908-9.	1909-10.	1910-11.	1911-12.
1. Alienated.					
Granted and sold by private tender and public auction, at prices ranging from five to twenty shillings per acre, prior to 1862 ...	7,146,579	7,146,579	7,146,579	7,146,579	7,146,579
Sold by auction and other sales, 1862 to date ...	14,638,888	14,889,219	14,897,415	14,903,655	14,909,311
Conditionally sold, 1862 to date ...	4,212,189	12,848,166	13,928,053	14,560,791	15,232,355
Granted under Volunteer Land Regulations, 1867 to date ...	168,545	169,764	170,114	170,650	171,498
Granted for public and religious purposes ...	241,968	228,275	228,712	230,907	232,822
Homestead grants ...	35,385	1,501,738	1,628,176	1,729,154	1,518,703
Total area alienated ...	26,443,554	36,783,741	†37,999,049	†38,741,736	39,211,268
2. In Process of Alienation.					
Under system of deferred payments ...	20,044,703	14,163,478	14,362,463	15,614,036	16,529,008
Under system of homestead selections (including leases converted, but excluding grants issued) ...	1,550,985	742,338	622,903	§	§
Closer settlement purchases ...	...	312,075	475,553	596,149	812,426
Total area in process of alienation ...	21,595,688	15,217,891	15,460,919	16,210,185	17,341,434
3. Held under Leases and Licenses.					
Total under Lands Department and Western Land Board ...	126,921,161	128,179,127	125,491,878	122,998,519	125,827,179
Mineral and auriferous leases and licenses (Mines Department) ...	134,209	‡211,741	‡241,752	‡225,040	236,852
Total leases under all Government Departments ...	127,055,370	128,390,868	125,733,630	123,223,559	126,064,031
4. Unoccupied ...	23,543,468	18,245,580	19,444,462	20,462,600	15,437,687

Area of State (exclusive of Commonwealth Territory)—198,054,420 acres.

* The figures for 1901 are up to the 31st December, while for the other years given they are up to the 30th June. † Includes 495,052 acres acquired for closer settlement. ‡ Inclusive of alienated area within the Commonwealth Territory, and acquisitions under Closer Settlement Acts. § Now included under Homestead grants. || Up to 31st December.

3. Victoria.—The total area of the State of Victoria is 56,245,760 acres, of which 23,727,962 acres, or about three-eighths, had been alienated absolutely up to the end of the year 1911; 6,364,995 acres, or about one-ninth, were in process of alienation under deferred payments; and 14,719,149 acres were occupied under leases and licenses, while the remaining 11,336,654 acres were unoccupied. The following table shews the areas alienated and in process of alienation, together with the areas reserved, leased, and available for occupation at the end of the year 1901 and from 1907 to 1911:—

**VICTORIA.—ALIENATIONS AND OCCUPATION OF CROWN LANDS,
1901 and 1907-1911.**

Particulars.	Area in Acres					
	1901.	1907.	1908.	1909.	1910.	1911.
1. Alienated	20,066,875	22,940,143	23,074,634	23,107,613	23,568,070	23,727,962
2. In Process of Alienation—						
Exclusive of Mallee, etc. ...	3,587,668	1,897,796	1,941,474	2,017,219	*2,079,977	1,953,268
Mallee Lands	87,606	2,373,316	2,728,595	3,077,067	3,493,952	4,076,792
Under Closer Settlement Acts ...	...	164,561	174,812	190,784	221,565	303,024
Village Settlements	55,077	52,673	45,140	42,645	39,278	31,911
Total	3,730,351	4,488,346	4,890,021	5,327,715	5,834,772	6,364,995
3. Leases and Licences Held—						
Under Lands Department ...	17,110,709	16,565,917	15,955,346	16,384,395	15,433,875	14,719,149
Under Mines Department† ...	...	...	...	...	...	...
4. Unoccupied Crown Lands ...	15,337,825	12,251,354	12,325,759	11,426,037	11,409,043	11,433,654

Total area of State—56,245,760 acres.

* Including 187,778 acres which, having reverted to the Crown in March, 1911, are now included in Mallee Lands. † Not available.

Crown lands in Victoria include roads, 1,702,843 acres; water reserves, 315,917 acres; agricultural colleges, etc., 84,932 acres; State forests and timber reserves (now under Forests Act 1907), 3,902,520 acres; State forests and timber reserves under Land Acts, 268,591 acres; reserves in the Mallee, 397,881 acres; unsold land in towns, etc., 2,114,595 acres; and other reserves, 296,270 acres. The Crown Lands Reserve Act was passed in 1910; it revokes permanent reserves for public purposes, in order that the areas totalling 1,591,500 acres may be dealt with as unoccupied Crown lands. Of these lands 1,195,000 acres are mallee country situated in the county of Millewa, while the remainder, 396,500 acres, are situated in the counties of Dargo and Croajingolong in the eastern part of the State.

4. **Queensland.**—The total area of this State is 429,120,000 acres, of which, on the 31st December, 1911, 15,709,186 acres, or about one-twenty-seventh, were alienated absolutely; 9,025,049 acres, or about one-forty-eighth, were in process of alienation; 308,205,936, or nearly three-quarters, were occupied under leases and licenses; roads, reserves, etc., occupied 14,828,256 acres, the remaining 81,351,573 acres being unoccupied. From 1901 to 1911 the area alienated absolutely increased by 2,175,718 acres or 16 per cent., and the area in process of alienation by 6,233,385 acres or 223½ per cent.

The following table shews the area alienated absolutely, the area in process of alienation, and the area held under various forms of lease and license at the end of the year 1901 and from 1907 to 1911:—

**QUEENSLAND.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 and 1907-1911.**

Particulars.	Area in Acres.					
	1901.	1907.	1908.	1909.	1910.	1911.
1. Alienated Absolutely—						
By Purchase	13,462,304	14,842,621	15,026,180	15,214,148	15,377,626	15,626,173
Without Payment	71,164	81,796	82,259	82,540	82,728	83,013
Total	13,533,468	14,924,417	15,108,439	15,296,688	15,460,352	15,709,186
2. In Process of Alienation ...	2,791,664	4,778,908	6,200,980	6,806,467	7,971,342	9,025,049
3. Occupied under Leases and Licenses—						
Runs Settled Districts	176,000	192,346,480	201,872,640	209,143,600	218,142,640	222,158,880
.. Unsettled Districts	222,553,760					
Occupation Licenses	35,103,600	43,138,000	40,039,040	38,062,240	37,834,960	43,478,880
Grazing Farms and Homesteads	21,733,242	28,232,332	30,883,705	35,250,197	38,460,439	42,130,631
Scrub Selections	272,946	275,621	258,208	273,102	235,150	234,435
Leases Special Purposes	249	11,446	8,087	52,722	57,782	45,000
Under Mines Department	134,182	123,321	140,735	147,010	187,158	140,021
Perpetual Lease Selections ... ..	...	...	...	...	...	18,089
Total	280,023,979	264,127,200	273,207,365	282,908,871	294,018,129	308,205,936
4. Roads and Reserves ... ..	...	...	...	...	...	14,828,256
5. Unoccupied	132,770,889	145,289,475	134,603,266	124,107,974	110,870,177	81,351,573

Total area of State—429,120,000 acres.

The area open for selection (as distinguished from occupation for purely pastoral or special purposes) under every mode at the beginning of the year 1911 was 6,261,719 acres, and the area opened during the year was 7,708,977 acres, while the area withdrawn was 1,035,011 acres. The area selected was 6,325,890 acres, and the area remaining open at the end of the year was 6,583,732 acres. The number of grazing selections was 425 as against 414 in the previous year, and their gross area 4,488,712 acres, as against 3,883,830 acres.

5. South Australia.—The area of the State of South Australia is 243,244,800 acres. In South Australia, at the end of the year 1911, there were 9,892,597 acres, or about one twenty-fifth, alienated absolutely; 1,761,442 acres, or about one one-hundred and thirty-eighth, were in process of alienation; 111,090,587 acres, or about three-sevenths, were occupied under leases and licenses; while the remaining 120,500,174 acres were unoccupied. From 1901 to the end of 1911, the area of land absolutely alienated has increased by more than two million acres, or over 30 per cent., while, during the same period, the area of land in process of alienation has increased by more than a million acres, or over 200 per cent. The subjoined table shews for South Australia the area of land alienated absolutely, and in process of alienation under deferred payments, and the area held under different forms of leases:—

**SOUTH AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 and 1907-1911.**

Particulars.	Area in Acres.					
	1901.	1907.	1908.	1909.	1910.	1911.
1. Alienated—						
Sold	7,413,510	8,194,032	8,341,566	8,598,751	9,146,396	9,769,993
Granted for Public Purposes ...	121,613	122,027	122,065	72,123	122,393	122,604
Total	7,535,123	8,316,059	8,463,631	8,670,874	9,268,789	9,892,597
2. In Process of Alienation—	553,774	1,134,424	1,195,550	1,297,277	1,463,038	1,761,442
3. Held under Lease and License—						
Right of Purchase	5,639,519	4,579,418	4,424,814	4,232,009	3,697,423	3,150,533
Perpetual	7,115,782	12,568,576	13,269,290	14,088,923	14,789,305	15,020,544
Pastoral	68,916,125	79,388,240	83,009,650	87,038,450	91,434,450	91,546,770
Other Leases and Licenses ...	3,905,729	1,985,866	1,812,959	1,513,032	1,394,964	1,283,663
*Mining " "	14,140	170,204	100,387	84,293	197,714	89,077
Total	85,591,295	98,692,304	102,617,100	106,956,007	111,513,856	111,090,587
4. Total Occupied	93,680,192	108,142,787	112,276,281	116,924,158	122,245,683	122,744,626
5. Area Unoccupied	149,564,608	135,102,013	130,968,519	126,320,642	120,969,117	120,500,174

Total area of State.—243,244,800 acres.

* Exclusive of miners' rights.

6. Western Australia.—The total area of Western Australia is 624,588,800 acres, of which on the 30th June, 1912, 7,387,929 acres, or about a one-eighty-fifth part, were alienated absolutely; 13,405,969 acres, or about one-forty-seventh part, were in process of alienation; while 175,677,865 acres, a little more than a quarter, were occupied under leases and licenses issued either by the Lands or the Mines Departments. The remaining 428,117,637 acres, or about two-thirds, were unoccupied.

The following table shews the area alienated absolutely and conditionally, and the areas held under leases and licenses at the end of the years 1901 and on 30th June, 1908 to 1912:—

**WESTERN AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 and 1908-1912.**

Particulars.	Area in Acres.					
	1901.	1907-8.*	1908-9.*	1909-10.*	1910-11.*	1911-12.*
1. Absolutely Alienated	3,468,878	4,258,190	4,343,808	4,449,329	7,202,696	7,387,929
2. In Process of Alienation—						
Midland Railway Concessions ...	2,768,810	2,686,521	2,686,521	2,686,521	121,800	121,800
Free Homestead Farms	283,455	1,060,153	1,208,023	1,366,066	1,454,275	1,531,424
Conditional Purchases... ..	1,349,554	4,195,287	4,855,747	6,067,901	7,305,932	8,285,058
Selections from the late W.A. Company	75,213	48,966	43,247	38,628	33,259	16,413
Selections under the Agricultural Lands Purchase Act ...	37,235	146,770	180,313	202,059	250,646	253,588
Special Occupation Leases and Licenses	8,867	4,320	3,353	2,805	2,404	2,110
Homestead or Grazing Leases ...	286,425	1,516,755	2,278,714	2,433,341	2,592,043	3,115,727
Poison Land Leases or Licenses ...	1,306,270	85,308	85,303	82,019	82,019	78,426
Immigrants' Grants	400	100	100	100	100	100
Village Allotments	6	36	36	36	36	35
Working-men's Blocks... ..	31	537	667	719	722	688
Total in Process of Alienation	6,116,266	9,744,748	11,342,024	12,880,195	11,843,236	13,405,969

**WESTERN AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN
LANDS, 1901 and 1908-1912.—Continued.**

Particulars.	Area in Acres.					
	1901.	1907-8.	1908-9*	1909-10.*	1910-11.*	1911-12.*
3. Leases and Licenses in Force—						
(i) <i>Issued by Lands Department—</i>						
Pastoral Leases ...	96,508,549	159,929,858	162,277,805	165,463,185	167,933,347	173,431,848
Special Leases ...	448	83,568	31,300	24,780	26,710	33,157
Leases of Reserves ...	5,296	207,571	219,582	475,901	572,400	630,127
Selections in Goldfields ...	3,955	100	100	100	100	100
Timber Leases and Licenses ...	865,180	903,154	916,386	1,143,572	1,304,282	1,423,282
Residential Lots ...	560	676	599	534	468	405
(ii) <i>Issued by Mines Department—</i>						
Gold Mining Leases ...	34,066					
Mineral Leases ...	6,576	†130,970	†130,970	†128,129	†100,337	158,946
Other Leases ...	8,623					
Licenses ...	17,397					
Total under Leases and Licenses	97,450,860	161,255,897	163,576,742	167,236,201	169,937,644	175,677,865
4. Area Unoccupied ...	517,552,996	449,329,965	445,326,226	440,023,075	435,605,224	248,117,637

Total area of State—624,588,800 acres.

* Figures are now given as up to the 30th June, instead of as up to 31st December. Figures for previous years may be obtained from the Statistical Registers of Western Australia. † On the 31st December, 1908. ‡ On the 31st December.

7. Tasmania.—Of the total area of Tasmania, namely, 16,777,600 acres, there were at the end of the year 1911, 4,965,331 acres, or about three-tenths, alienated absolutely; 1,274,947 acres, or about one-fourteenth, were in process of alienation; 1,518,710 acres, or about one-eleventh, were occupied under leases and licenses for either pastoral, agricultural, timber, or mining purposes; the remaining 9,018,612 acres, or about eleven-twentieths, being unoccupied. The following table shews the areas alienated, in process of alienation, and held under lease or license, and the area unoccupied at the end of the year 1901 and from 1907 to 1911:—

**TASMANIA.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 and 1907 to 1911.**

Particulars.	Area in Acres.					
	1901.	1907.	1908.	1909.	1910.	1911.
1. Alienated Absolutely ...	4,621,585	4,805,697	4,848,058	4,890,000	4,932,276	4,965,331
2. In Process of Alienation ...	272,376	796,725	870,088	1,006,642	1,104,379	1,274,947
3. Leases or Licenses						
(i) <i>Issued by Lands Department—</i>						
Islands ...	149,165	109,531	103,130	90,100	87,100	62,000
Ordinary Leased Land ...	1,280,688	1,145,823	1,235,823	1,173,823	1,176,900	1,242,400
Land Leased for Timber ...	40,768	88,035	91,972	100,098	108,889	134,516
Closer Settlement ...		10,365	18,156	27,657	29,726	34,841
(ii) <i>Issued by Mines Department</i>	50,362	79,163	56,693	55,819	57,908	44,953
Total	1,520,983	1,432,917	1,505,774	1,447,497	1,460,523	1,518,710
4. Total Area Occupied ...	6,414,944	7,035,339	7,223,920	7,344,139	7,497,178	7,758,988
5. Area Unoccupied ...	10,362,656	9,742,261	9,553,680	9,433,461	9,280,422	9,018,612

Total area of State—16,777,600 acres.

8. Northern Territory.—On the 1st January, 1911, the Northern Territory was taken over by the Commonwealth. In the Northern Territory at the end of the year 1911, there

were 473,990 acres, or only about one seven-hundred-and-seventh part alienated absolutely; 93,744,961 acres, or nearly two-sevenths, were held under leases and licenses; while the remaining 240,897,849 acres, or about five-sevenths, were unoccupied. The following table shews the area of land alienated absolutely, and also the area under lease:—

**NORTHERN TERRITORY.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 and 1907-1911.**

Particulars.	Area in Acres.					
	1901.	1907.	1908.	1909.	1910.	1911.
1. Alienated—						
Sold	473,230	473,232	473,761	473,761	473,942	473,942
Granted for Public Purposes	48	48	48	48	48	48
Total Alienated	473,278	473,280	473,809	473,809	473,990	473,990
2. Leased—						
Right of Purchase	1,067	2,771	2,931	5,224	667	667
Pastoral	111,476,240	105,918,880	102,123,040	95,559,840	98,729,120	92,045,540
Other Leases	1,176,981	1,347,858	1,293,457	512,650	445,236	1,688,754
Total Leased	112,654,288	107,269,509	103,419,428	96,077,714	99,175,023	93,744,961
3. Total Occupied	113,127,566	107,742,789	103,893,237	96,551,523	99,649,013	94,218,951
4. Remainder Unoccupied	221,989,234	227,374,011	231,223,563	238,565,277	235,467,787	240,897,849
Total area of Northern Territory—335,116,800 acres.						

§ 12. Classification of Holdings according to Size.

1. General.—The classification of holdings according to their area is of interest chiefly in relation to the efforts made by the several States in recent years to promote settlement on the land on blocks of suitable size, especially by means of the Closer Settlement Acts. Returns shewing such a classification are not available for Queensland and the Northern Territory.

A table shewing the movement of land consequent on the operation of the Commonwealth Land Tax Act of 1910, can be found in the section dealing with Commonwealth Finance.

The following table gives particulars of the number and aggregate area of holdings of lands alienated and in process of alienation in area series, as returned to the collectors of agricultural statistics, for all the States excepting Queensland and the Northern Territory for the season 1911-12:—

CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES, 1911-12

Size of Holdings.	N.S.W.	Victoria.	S. Aust.	W. Aust.	Tasmania.	Total.
NUMBER.						
Acres.						
1 to 50	38,211	16,609	6,823	3,274	4,624	69,541
51 " 100	9,027	6,686	1,728	571	2,413	20,435
101 " 500	25,964	23,397	5,729	3,171	5,036	63,297
501 " 1,000	8,329	8,216	3,538	3,024	669	23,776
1,001 " 5,000	6,934	4,908	2,844	2,967	621	18,274
5,001 " 10,000	825	239	118	200	117	1,499
10,001 " 20,000	371	131	52	77	60	691
20,001 " 50,000	247	42	21	25	31	367
50,001 and over	84	2	1	6	2	95
Total...	89,992	60,240	20,854	13,316	13,573	197,975

**CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA
SERIES, 1911-12.—Continued.**

Size of Holding.	N.S.W.	Victoria.	S. Aust.	W. Aust.	Tasmania.	Total.
AREA.						
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1 to 50	503,060	322,297	103,845	38,876	71,992	1,040,070
51 " 100	714,310	514,529	125,950	50,472	160,802	1,566,063
101 " 500	6,578,002	6,049,267	1,587,365	877,741	1,015,176	16,107,551
501 " 1,000	5,822,517	5,814,331	2,375,344	2,393,783	449,415	16,855,390
1,001 " 5,000	13,743,189	8,750,188	4,780,887	5,788,524	1,298,172	34,360,960
5,001 " 10,000	5,715,461	1,651,979	770,691	1,373,029	818,148	10,329,308
10,001 " 20,000	5,174,155	1,881,282	734,441	1,078,746	771,420	9,640,044
20,001 " 50,000	7,249,093	1,300,459	610,898	1,020,552	808,460	10,989,462
50,001 and over	7,611,345	116,486	89,309	393,393	258,896	8,469,431
Total...	53,111,132	26,400,818	11,178,730	13,015,116	5,652,483	109,358,279

2. **New South Wales.**—The total number of holdings of one acre and over in area in this State on the 31st March, 1901, was 69,439. On the 31st March, 1912, the corresponding number was 89,992, shewing an increase of 20,553, or about 29.4 per cent. The following table shews the number of holdings of land alienated and in process of alienation, on the 31st March, 1901, and from 1907 to 1912:—

**NEW SOUTH WALES.—NUMBER OF HOLDINGS ALIENATED AND IN PROCESS OF
ALIENATION, 1901 and 1907-1912.**

Size of Holdings.	1901.	1907.	1908.	1909.	1910.	1911.	1912.
Acres.	Number.	Number.	Number.	Number.	Number.	Number.	Number.
1 to 50	28,155	33,184	34,833	35,345	36,288	37,272	38,211
51 " 100	6,929	9,185	9,136	9,105	9,173	9,159	9,027
101 " 500	20,504	22,986	23,652	24,069	24,672	25,322	25,964
501 " 1,000	6,106	5,944	7,203	7,321	7,632	7,911	8,329
1,001 " 5,000	4,464	5,373	5,542	5,795	5,991	6,395	6,934
5,001 " 10,000	579	625	638	691	711	738	825
10,001 " 20,000	352	364	368	358	348	344	371
20,001 " 50,000	202	259	256	257	264	267	247
50,001 and over	149	106	104	103	99	95	84
Total	69,439	79,02	81,732	83,045	85,178	87,503	89,992

3. **Victoria.**—Lands alienated absolutely and in process of alienation in this State were classified according to size in March, 1906, 1908, and 1910. The following table shews the number and area of holdings of such lands on the 1st March, 1906, 1908 and 1910:—

**VICTORIA.—NUMBER OF HOLDINGS ALIENATED AND IN PROCESS OF
ALIENATION, 1906-1910.**

Size of Holdings.	1906.	1908.	1910.
Acres.	Number.	Number.	Number.
1 to 50	13,309	14,692	16,609
51 " 100	5,864	6,223	6,696
101 " 500	21,628	22,510	23,397
501 " 1,000	7,688	7,817	8,216
1,001 " 5,000	4,083	4,409	4,908
5,001 " 10,000	220	231	239
10,001 " 20,000	116	118	131
20,001 " 50,000	73	61	42
50,001 and over	6	4	2
Total	52,987	56,065	60,240

4. **South Australia.**—In the State of South Australia the number of holdings of alienated lands, and lands in process of alienation, was available for the first time in 1910-11. The following table shews the number and area of such holdings for 1910-11 and 1911-12:—

SOUTH AUSTRALIA.—NUMBER OF HOLDINGS ALIENATED AND IN PROCESS OF ALIENATION, 1910-11 and 1911-12.

Size of Holdings.	1910-11.		1911-12.	
	Number.	Area.	Number.	Area.
Acres.		Acres.		Acres.
1 to 50	6,745	102,259	6,823	103,845
51 „ 100	1,646	123,576	1,728	125,950
101 „ 500	5,542	1,563,156	5,729	1,587,365
501 „ 1,000	3,370	2,389,368	3,538	2,375,344
1,001 „ 5,000	2,540	4,395,217	2,844	4,780,887
5,001 „ 10,000	110	691,501	118	770,691
10,001 „ 20,000	53	698,253	52	734,441
20,001 „ 50,000	23	631,353	21	610,898
50,001 and over	1	67,715	1	89,309
Total	20,030	10,602,398	20,854	11,178,730

5. **Western Australia.**—In this State the number of holdings of one acre and over in area was 5699 for the season 1900-1 (see Year Book No. 1), and 13,316 for the season 1910-11, shewing an increase of 7617, or about 134 per cent. The subjoined table shews the number of holdings of land alienated, and in process of alienation, for 1901 and 1907-1911:—

WESTERN AUSTRALIA.—NUMBER OF HOLDINGS ALIENATED AND IN PROCESS OF ALIENATION, 1901 and 1907-1912.

Size of Holdings.	1900-1.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
Acres.	Number.	Number.	Number.	Number.	Number.	Number.
1 to 50	1,728	2,933	3,061	3,078	3,135	3,274
51 „ 100	198	509	510	517	549	571
101 „ 500	2,302	3,067	3,314	3,318	3,212	3,171
501 „ 1,000	717	1,731	2,038	2,320	2,777	3,024
1,001 „ 5,000	607	1,685	1,848	2,200	2,616	2,967
5,001 „ 10,000	73	145	158	170	189	200
10,001 „ 20,000	38	66	71	88	79	77
20,001 „ 50,000	36*	24	25	29	24	26
50,001 and over ... ..	...	7	6	6	7	6
Total	5,699	10,167	11,031	11,726	12,588	13,316

* Including all holdings of 20,001 acres and upwards.

6. **Tasmania.**—In Tasmania the total number of holdings of land alienated and in process of alienation on the 1st March, 1909, was 12,413. Particulars for previous years are not available. The following table shews the classification of such holdings in area series for each year from 1908-9 to 1911-12 :—

**TASMANIA.—NUMBER OF HOLDINGS ALIENATED AND IN PROCESS OF
ALIENATION, 1908-9 to 1911-12.**

Size of Holdings.	1908-9.		1909-10.		1910-11.		1911-12.	
	Number.		Number.		Number.		Area.	
Acres.							Acres.	
1 to 50	4,301	4,526	4,596	71,890	4,624	71,992		
51 " 100	2,277	2,341	2,334	157,892	2,413	160,802		
101 " 500	4,486	4,784	4,957	992,020	5,036	1,015,176		
501 " 1,000	585	624	675	453,485	669	449,415		
1,001 " 5,000	572	588	589	1,226,455	621	1,298,172		
5,001 " 10,000	108	116	119	825,422	117	818,148		
10,001 " 20,000	57	61	51	687,913	60	771,420		
20,001 " 50,000	24	26	26	706,996	31	808,460		
50,001 and over	3	2	2	258,898	2	258,898		
Total ...	12,413	13,068	13,349	5,380,971	13,573	5,652,483		

§ 13. The Progress of Land Settlement, 1901 to 1911.

1. **Recent Progress.**—The progress of settlement and the growth of land alienation in the States of the Commonwealth under recent legislation is seen in the subjoined statement, which shews concisely the condition of the public estate in each State and in the Commonwealth at the end of each year from 1901 to 1911, inclusive. The effect of the land laws during that period has been generally to diminish the number of large holdings, at the same time decreasing the area held under lease, while both the area alienated and the area in process of alienation have increased. As leases of large areas fall in or are otherwise terminated they are in many cases not renewed, but the land leased is cut up for the purpose of settlement under systems of deferred payment; the State Governments, also, have in many cases acquired by repurchase considerable areas under the provisions of the various Closer Settlement Acts. Further, greater facilities have been granted to the working classes to acquire possession of the soil, and special inducements have been offered to *bona fide* settlers by the introduction of new forms of tenure on easy terms and conditions.

From 1901 to 1911 the area alienated absolutely in the whole Commonwealth increased by 24,570,737 acres, or 32 per cent.; the area in process of alienation increased by 11,419,735 acres, or 31 per cent.; the area leased by 101,033,262 acres, or 14 per cent.; while the area unoccupied decreased by 137,023,734 acres, or 14 per cent.

TOTAL AREAS ALIENATED, IN PROCESS OF ALIENATION, HELD UNDER LEASE OR LICENSE, AND UNOCCUPIED.

EXPRESSED ABSOLUTELY AND AS PERCENTAGES OF AREA OF ENTIRE STATE
FOR THE YEARS 1901 AND 1907-11.

Year.	Alienated.		In Process of Alienation.		Held under Lease or License.		Occupied by the Crown or Unoccupied.*	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.

NEW SOUTH WALES.—AREA, 198,054,420 ACRES.

1901	26,443,554	13.32	21,595,688	10.87	127,055,370	63.96	23,543,468	11.85
1907	33,921,508	17.08	16,720,147	8.42	126,081,293	63.47	21,915,132	11.03
1908	35,467,021	17.85	15,798,047	7.95	129,150,578	65.02	18,222,434	9.18
1909	36,783,741	18.52	15,217,891	7.66	128,390,868	64.63	18,245,590	9.19
1910	37,999,049	19.13	15,460,919	7.78	125,733,630	63.30	19,444,482	9.79
1911	38,741,736	19.50	16,210,185	8.16	123,223,559	62.04	20,462,600	10.30
1912†	39,211,268	19.75	17,341,434	8.75	126,064,031	63.65	15,437,687	7.85

* To 31st December; subsequent years to 30th June. † Exclusive of Commonwealth Territory

VICTORIA.—AREA, 56,245,760 ACRES.

1901	20,066,875	35.67	3,730,351	6.63	17,110,709	30.42	15,337,825	27.28
1907	22,940,143	40.79	4,488,346	7.98	16,565,917	29.45	12,251,354	21.78
1908	23,074,634	41.03	4,890,021	8.69	15,955,346	28.36	12,325,759	21.92
1909	23,107,613	41.08	5,358,496	9.53	16,384,395	29.13	11,395,256	20.26
1910	23,568,070	41.90	5,869,185	10.43	15,433,875	27.45	11,374,630	20.22
1911	23,727,962	42.18	6,364,995	11.31	14,719,149	26.34	11,433,654	20.17

QUEENSLAND.—AREA, 429,120,000 ACRES.

1901	13,533,468	3.15	2,791,664	0.65	280,023,979	65.26	132,770,889	30.94
1907	14,924,417	3.48	4,778,908	1.11	264,219,200	61.57	145,197,475	33.84
1908	15,108,439	3.52	6,200,930	1.45	273,307,365	63.69	134,503,266	31.34
1909	15,296,688	3.56	6,806,467	1.59	283,023,871	65.95	123,992,974	28.90
1910	15,460,352	3.60	7,971,342	1.86	295,385,129	68.84	110,303,177	25.70
1911	15,709,186	3.66	9,025,049	2.10	308,205,936	71.82	96,179,829	22.42

SOUTH AUSTRALIA.—AREA, 243,244,800 ACRES.

1901	7,535,123	3.10	553,774	0.23	85,591,295	35.18	149,564,608	61.49
1907	8,316,059	3.42	1,134,424	0.47	98,692,304	40.57	135,102,018	55.54
1908	8,463,631	3.48	1,195,550	0.49	102,617,100	42.20	130,968,519	53.83
1909	8,670,874	3.56	1,297,277	0.53	106,956,007	43.97	126,320,642	51.94
1910	9,268,789	3.81	1,463,038	0.60	111,513,856	45.80	120,999,117	49.79
1911	9,892,597	4.07	1,761,442	0.72	111,090,587	45.67	120,500,174	49.54

* Including roads and reserves.

TOTAL AREAS ALIENATED, IN PROCESS OF ALIENATION, ETC.—Continued.

Year.	Alienated.		In Process of Alienation.		Held under Lease or License.		Occupied by the Crown or Unoccupied.*	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.
WESTERN AUSTRALIA.—AREA, 624,588,800 ACRES.								
1901	3,468,878	0.56	6,116,266	0.98	97,450,660	15.60	517,552,996	82.86
1907 ¹	3,969,965	0.63	9,100,041	1.46	160,205,944	25.65	451,312,850	72.26
1908 ¹	4,258,190	0.68	9,744,748	1.56	161,255,897	25.82	449,329,965	71.94
1909 ¹	4,343,808	0.70	11,342,024	1.81	163,576,742	26.19	445,326,226	71.30
1910 ¹	4,449,329	0.71	12,880,195	2.06	167,236,201	26.78	440,023,075	70.45
1911 ¹	7,202,696	1.15	11,843,236	1.90	169,937,644	27.21	435,605,224	69.74
1912 ¹	7,887,929	1.18	13,405,369	2.16	175,677,865	28.13	428,117,637	68.53

1. To 30th June.

TASMANIA.—AREA, 16,777,600 ACRES.

1901	4,621,585	27.54	272,376	1.62	1,520,983	9.06	10,362,656	61.78
1907	4,805,697	28.64	796,725	4.75	1,432,917	8.54	9,742,261	58.07
1908	4,848,056	28.90	870,088	5.19	1,505,774	8.97	9,553,680	56.94
1909	4,890,000	29.15	1,006,642	6.00	1,457,497	8.68	9,423,461	56.17
1910	4,932,276	29.40	1,104,379	6.58	1,460,523	8.71	9,280,422	55.31
1911	4,965,331	29.60	1,274,947	7.60	1,518,710	9.05	9,018,612	53.75

NORTHERN TERRITORY.—AREA, 335,116,800 ACRES.

1901	473,278	0.14	...	...	112,654,288	33.62	221,989,234	66.24
1907	473,280	0.14	...	...	107,269,509	32.01	227,374,011	67.85
1908	473,809	0.14	...	...	103,419,428	30.86	231,223,563	69.00
1909	473,809	0.14	...	...	96,077,714	28.67	238,565,277	71.19
1910	473,990	0.14	...	...	99,175,023	29.60	235,467,787	70.26
1911	473,990	0.14	...	...	93,744,961	27.97	240,897,849	71.89

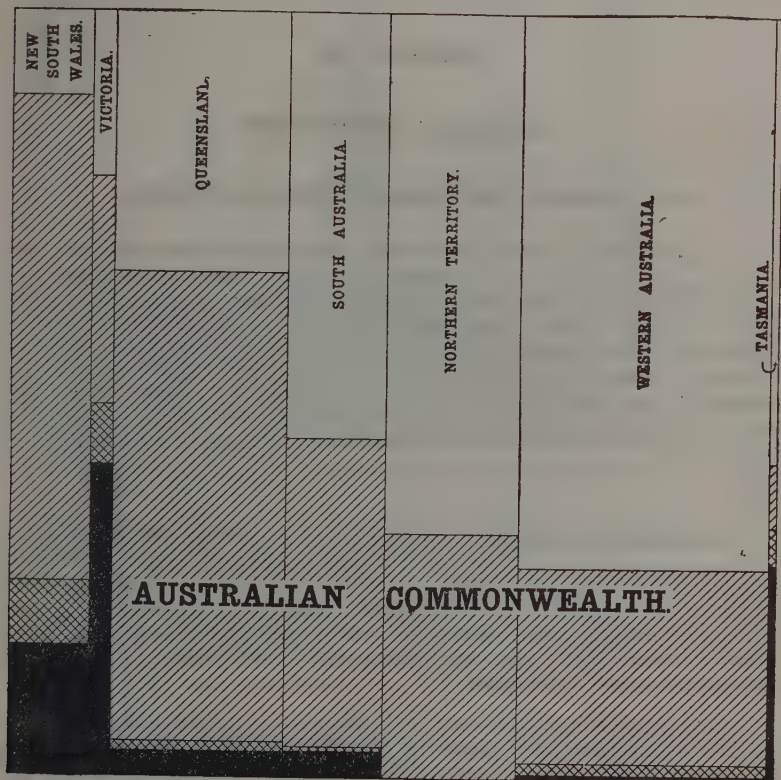
THE COMMONWEALTH.—AREA, 1,903,731,840 ACRES.

1901	76,142,761	4.00	35,060,119	1.84	721,407,284	37.89	1,071,121,676	56.27
1907	89,351,069	4.69	37,018,591	1.95	774,467,084	40.68	1,002,895,096	52.68
1908	91,693,782	4.82	38,699,384	2.02	787,211,488	41.36	986,127,186	51.80
1909	93,566,533	4.91	41,028,797	2.15	795,877,094	41.81	973,259,416	51.13
1910	96,151,855	5.05	44,749,058	2.35	815,938,237	42.85	946,892,690	49.75
1911	100,713,498	5.29	46,479,854	2.45	822,440,546	43.20	934,097,942	49.06

* Including roads and reserves.

2. Diagram shewing Condition of Public Estate.—The following diagram shews the condition of the public estate in the Commonwealth at the end of the year 1911. The square itself represents the total area of the Commonwealth, while the relative areas

of individual States are shown by the vertical rectangles. The areas alienated absolutely, in process of alienation under systems of deferred payments, and the areas held under leases or licenses, are designated by the differently-shaded areas as described in the reference given below the diagram, while the areas unoccupied are left unshaded:—



Area alienated absolutely



Area held under lease, etc.



Area in process of alienation



Area unoccupied



3. Federal Territory. The following particulars relate to the tenures of land within the Federal Capital Territory at the end of the year 1912. The figures are approximate:—

FEDERAL CAPITAL TERRITORY, TENURES OF LAND, 1912.

Alienated.	In Process of Alienation.	Leases.	Occupied by the Crown or unoccupied.	Total.
Acres. 95,539	Acres. 81,239	Acres. 336,099*	Acres. 70,783	Acres. 583,660

*Including 87,732 acres resumed by the Crown in 1912.

SECTION VII.

PASTORAL PRODUCTION.

§ 1. Initiation and Growth of Pastoral Industry.

1. **Early Statistics.**—The live stock which Captain Phillip brought with him when establishing the first settlement in Australia, in January, 1788, is stated to have comprised seven horses, six cattle, twenty-nine sheep, twelve pigs, and a few goats. Later in the same year, in a letter from Captain Phillip to Lord Sydney, then Secretary of State for the Colonies, an enclosure signed by "Andrew Miller, Commissary," sets forth in detail the numbers of each kind of live stock in the colony on 1st May, 1788. A summary of the particulars supplied is as follows:—Horses, 7; cattle, 7; sheep, 29; pigs, 74; rabbits, 5; turkeys, 18; geese, 29; ducks, 35; fowls, 209. In view of the depredations since caused by rabbits their inclusion in this return as part of the live stock of the Commonwealth is of interest.

2. **Subsequent Development.**—During the years immediately succeeding the first settlement the growth of the number of live stock was slow, and notwithstanding importations from India and the Cape of Good Hope the total of the flocks and herds of Australia amounted in 1800 to only 203 horses, 1044 cattle, 6124 sheep, and 4017 pigs. During the next fifty years, however, the pastoral industry made rapid strides, and at the end thereof (1850) the totals reached were 159,951 horses, 1,894,834 cattle, 15,993,954 sheep, and 114,000 pigs.

The statistical records of live stock in Australia prior to the year 1860 are somewhat defective, but from that year onwards fairly complete particulars are available in most of the States. At the present time statistics of live stock are collected annually in all the States, principally through the agency of the police, but in the years 1885 to 1888 inclusive, and 1893 to 1895 inclusive, no such particulars were collected in South Australia, and similar gaps occur in the Victorian records for the periods 1895 to 1899 inclusive, and 1901 to 1903. In order to obtain totals for the Commonwealth for these years the missing numbers have been supplied by interpolation. The results so obtained probably differ but slightly from the actual numbers for the respective years.

3. **Increase in Numbers.**—Particulars concerning the numbers of each of the principal kinds of live stock in the Commonwealth at quinquennial intervals from 1860 to 1905, and thence onwards in single years, are given in the following table, and are shewn continuously in the graphs as given hereinafter.

During the fifty-one years covered by the table the live stock of the Commonwealth increased considerably, horses by 428 per cent., cattle 199 per cent., sheep 362 per cent., and pigs 216 per cent. The average annual increases which these aggregates represent are as follows:—Horses, 3.32 per cent. per annum; cattle, 2.17 per cent.; sheep, 3.15 per cent.; and pigs, 2.38 per cent.

COMMONWEALTH LIVE STOCK, 1860 to 1911.

Year.	Horses.	Cattle.	Sheep.	Pigs.
1860	431,525	3,957,915	20,135,286	351,096
1865	566,574	3,724,813	29,539,928	345,704
1870	716,772	4,276,326	41,593,612	543,388
1875	835,393	6,389,610	53,124,209	549,808
1880	1,061,078	7,523,000	62,176,027	815,776
1885	1,143,064	7,397,847	67,491,976	748,908
1890	1,521,588	10,299,913	97,881,221	891,138
1895	1,680,419	11,767,488	90,689,727	822,750
1900	1,609,654	8,640,225	70,602,995	950,349
1905	1,674,790	8,528,331	74,540,916	1,014,977
1906	1,765,186	9,349,409	83,687,655	813,569
1907	1,871,714	10,123,486	87,650,263	754,101
1908	1,927,729	10,547,679	87,043,266	695,691
1909	2,022,917	11,040,391	91,676,281	765,137
1910	2,165,866	11,744,714	92,047,015	1,025,850
1911	2,279,027	11,828,954	93,003,521	1,110,721

4. **Fluctuations.**—The increases referred to, however, have not been continuous, marked fluctuations having taken place during the period, mainly on account of the droughts which have from time to time left their impress on the pastoral history of Australia. These were in evidence in 1869, 1877, 1884, 1895 and subsequent years, 1902, and to some extent in 1908. The drought of 1902 was one of the most severe experienced in Australia, the number of sheep in the Commonwealth diminishing under its influence from 72,040,211 on 31st December, 1901, to 53,668,347 at the same date in 1902—a decrease of more than 25 per cent.

The extraordinary recuperative power of Australia is evidenced by the large increases in the numbers of stock which the good seasons, supervening on the various droughts, have witnessed. Thus, in the nine years from 1902 to 1911, horses increased by 754,426, cattle by 4,766,212, and sheep by 38,335,174, the corresponding increases per cent. per annum being horses 4.57 per cent., cattle 5.90 per cent., and sheep 6.30 per cent.

The numbers of horses and pigs in the Commonwealth at the end of 1911 were higher than for any previous year, the number of sheep higher than for any year since 1894, while the number of cattle has only been exceeded by that year's record. The years in which the numbers of live stock attained their maxima are as follows:—Horses, 1911, 2,279,027; cattle, 1894, 12,311,617; sheep, 1891, 106,421,068; and pigs, 1911, 1,110,721.

5. **Live Stock in Relation to Population.**—The number of each kind of live stock per head of the population of the Commonwealth has varied during the past fifty-one years in the manner shewn in the succeeding table:—

NUMBER OF LIVE STOCK PER HEAD OF POPULATION, 1860 to 1911.

Year.	Horses.	Cattle.	Sheep.	Pigs.	Year.	Horses.	Cattle.	Sheep.	Pigs.
1860	0.38	3.45	17.58	0.31	1900	0.43	2.29	13.75	0.25
1865	0.41	2.68	21.25	0.25	1905	0.42	2.11	18.48	0.25
1870	0.43	2.60	25.24	0.33	1906	0.43	2.29	20.45	0.20
1875	0.44	3.37	27.99	0.29	1907	0.45	2.43	21.06	0.18
1880	0.48	3.37	27.87	0.37	1908	0.46	2.49	20.57	0.16
1885	0.42	2.75	25.05	0.28	1909	0.47	2.55	21.20	0.18
1890	0.48	3.27	31.06	0.28	1910	0.49	2.65	20.80	0.23
1895	0.48	3.36	25.93	0.24	1911	0.50	2.59	20.36	0.24

Considered in relation to population, the live stock attained its maximum in the period 1890-5, and its minimum in the year 1902. During the period of fifty-one

years under review, the number of horses varied but slightly in proportion to population, the range being from 0.38 to 0.50 per head. In the case of cattle, the limits of variation were 1.82 and 3.45; sheep, 13.85 and 31.06; and pigs, 0.16 and 0.37.

6. **Live Stock in Relation to Area.**—The numbers of live stock per square mile in the several States and Territories of the Commonwealth on 31st December, 1911, were as follows:—

NUMBER OF LIVE STOCK PER SQUARE MILE, 31st DECEMBER, 1911.

States and Territories.	Horses.	Cattle.	Sheep.	Pigs.
New South Wales	2.22	10.29	144.51	1.20
Victoria	5.78	18.74	157.68	3.96
Queensland	0.92	7.57	30.93	0.26
South Australia...	0.68	1.04	16.24	0.25
Western Australia	0.14	0.86	5.55	0.06
Tasmania	1.60	8.29	69.54	2.57
Northern Territory	0.04	0.88	0.10	0.003
Federal Capital Territory	1.96	9.35	249.74	0.42
Commonwealth	0.77	3.98	31.27	0.37

7. **Minor Classes of Live Stock.**—The numbers of minor classes of live stock returned as at 31st December, 1911, were as follows:—Goats, 280,086; camels, 8403; mules and donkeys, 6272; and ostriches, 1939. Of these, goats were most numerous in Queensland, camels and donkeys in Western Australia, and mules and ostriches in South Australia. In the raising of goats, considerable attention has in recent years been devoted to the angora goat and its product—mohair, and upwards of 20,000 angora goats are included in the total of 280,086 goats shewn above. Of these, 8332 were in Queensland, while the quantity of mohair produced in that State in 1911 was set down at 5785 lbs., and the number of skins placed on the market was returned as 1047.

8. **Net Exports of Principal Pastoral Products.**—The quantities by which the exports of the principal pastoral products of the Commonwealth exceeded the imports for the years 1907 to 1911 are as follows:—

**QUANTITIES OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS
OF THE COMMONWEALTH, 1907 to 1911.**

Products.	Unit of Quantity.	1907.	1908.	1909.	1910.	1911.
Animals (living)—						
Cattle	No.	504	847	894	3,641	9,861
Horses	"	12,116	9,164	6,335	6,619	4,377
Sheep	"	—398	9,001	2,540	10,281	18,965
Bones	cwt.	4,459	11,008	13,070	14,145	17,151
Glue Pieces and Sinews	lb.	21,941	23,417	20,199	20,570	29,211
Glycerine	"	592,435	*	*	*	*
Hair	"	285,478	191,475	190,052	304,006	287,957
Hoofs	cwt.	6,784	5,972	4,666	7,677	8,617
Horns	"	15,944	*	*	*	*
Meats—						
Frozen Beef	lb.	52,050,592	40,707,121	71,130,972	109,421,146	108,774,397
" Mutton and Lamb	"	109,227,757	91,607,614	116,914,965	190,228,396	129,567,812
" Rabbits and Hares	pair	10,648,534	7,604,053	9,181,312	9,652,127	8,362,994
" Other...	lb.	815,559	659,719	1,114,536	2,640,275	4,025,715
Potted and Extract of	"	*	*	*	*	*
Preserved in Tins, etc.	"	7,820,511	11,979,606	22,877,569	33,556,048	40,347,183
Other...	"	64,370	—120,055	235,479	591,196	1,062,233
Sausage Casings	"	*	*	*	*	*
Skins—						
Hides	No.	33,623	219,798	286,973	286,639	452,942
Sheep	"	9,691,688	8,683,034	10,658,776	11,119,338	9,748,630
Rabbit and Hare	cwt.	100,802	65,391	62,180	86,930	92,687
Other, including Undressed Furs	No.	*	*	*	*	*
Tallow	cwt.	674,723	586,220	929,157	1,256,661	1,343,046
Wool—Greasy	lb.	512,036,100	471,540,092	528,388,349	586,883,111	578,622,185
Scoured	"	72,295,353	70,883,847	73,569,380	77,042,042	69,223,301
Tops	"	*	*	496,492	1,123,469	2,515,106

* Quantity not available. Note. — signifies net imports.

The values of the net exports for the same five years are furnished in the next table and amount to no less a total than £170,205,579 for the period, or an average of £34,041,116 per annum, of which wool represents nearly 75 per cent. Meats, skins, and tallow rank next in order of importance.

**VALUE OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS OF THE
COMMONWEALTH, 1907 to 1911.**

Products.	1907.	1908.	1909.	1910.	1911.
Animals (living)—	£	£	£	£	£
Cattle	—1,445	704	3,876	11,516	37,864
Horses	266,325	152,672	84,695	—51,267	—128,022
Sheep	—2,127	5,735	6,030	16,448	12,732
Bones	5,628	5,189	6,041	7,366	9,798
Glue Pieces and Sinews	17,458	12,679	11,900	11,037	13,645
Glycerine	6,983	3,179	2,316	10,169	15,826
Hair	21,086	16,739	22,584	26,879	24,987
Hoofs	2,064	2,024	1,622	2,804	3,169
Horns	18,969	18,270	18,729	25,532	25,673
Meats—					
Frozen Beef	575,732	451,503	733,028	1,179,060	1,101,914
" Mutton and Lamb	1,377,502	1,219,107	1,231,027	2,161,495	1,633,597
" Rabbits and Hares	472,516	336,093	423,679	486,592	407,034
" Other	12,814	8,597	18,027	40,816	49,390
Potted and Extract of	19,591	22,108	57,061	70,504	57,356
Preserved in Tins, etc.	133,165	213,476	401,606	602,880	756,148
Other	673	—2,890	1,663	8,173	13,010
Sausage Casings	41,122	26,600	52,182	38,204	37,129
Skins—					
Hides	—10,079	86,310	239,539	286,274	467,364
Sheep	1,822,604	1,230,878	1,736,464	2,003,810	1,603,718
Rabbit and Hare...	374,882	304,990	347,244	566,739	498,037
Other, including Undressed Furs	304,130	276,703	607,158	822,095	476,872
Tallow	1,014,870	785,910	1,229,541	1,888,796	1,934,009
Wool—Greasy	22,898,318	18,017,420	20,580,783	23,431,947	21,388,155
Scoured	5,962,599	4,883,805	4,820,092	5,202,683	4,396,126
Tops	...	...	58,638	134,874	275,406
Total Values	35,335,960	28,077,711	32,695,425	38,964,426	35,112,037

Note. — signifies net imports.

§ 2. Horses.

1. **Suitability of Australia for Horse-breeding.**—From the earliest times the suitability of the climate and pastures of Australia for the production of serviceable breeds of horses has been fully recognised. By the importation of high-class sires, and the careful selection of breeding mares, these natural advantages were utilised to the fullest extent, all classes of horses being bred. As a consequence of this combination of advantages the Australian horse, whether of the heavy draught, medium weight, or light saddle and carriage variety, compares more than favourably with the product of other lands. The Australian horse has been found suitable for the army in India, and large numbers are obtained annually for remount purposes.

2. **Distribution throughout the Commonwealth.**—As regards numbers, the State of New South Wales, the earliest settled of the group, established a lead, which it has ever since retained. The figures for the several States for a series of years are as follows:—

**NUMBER OF HORSES IN STATES, TERRITORIES, AND COMMONWEALTH,
1860 to 1911.**

Year.	N.S.W.	Victoria.	Q'sland.	S. Aust.	W. Aust.	Tas.	N. T.	Fed. Cap. Terr.	Common- wealth.
1860...	251,497	76,536	23,504	49,399	9,555	21,034	...	...	431,525
1865...	282,587	121,051	51,091	73,993	15,700	22,152	...	...	566,574
1870...	337,597	167,220	83,358	83,744	22,174	22,679	...	...	716,772
1875...	357,696	196,184	121,497	107,164	29,379	23,473	...	...	835,393
1880...	395,984	275,516	179,152	148,219	34,568	25,267	*2,372	...	1,061,078
1885...	344,697	304,098	260,207	164,753	34,392	23,610	6,307	...	1,143,064
1890...	444,163	436,459	365,812	187,686	44,384	31,165	11,919	...	1,521,588
1895...	499,943	424,995	468,743	181,839	58,506	31,580	14,813	...	1,680,419
1900...	481,417	392,237	456,788	166,790	68,253	31,607	12,562	...	1,609,654
1905...	506,884	385,513	430,565	197,099	97,397	37,101	20,231	...	1,674,790
1906...	537,762	406,840	452,916	206,633	104,922	38,299	17,814	...	1,765,186
1907...	578,326	424,648	488,486	208,639	113,330	40,392	17,893	...	1,871,714
1908...	591,045	424,903	519,969	213,385	116,795	39,881	21,751	...	1,927,729
1909...	604,784	442,829	555,613	230,405	125,315	40,492	23,479	...	2,022,917
1910...	650,636	472,080	593,813	249,326	134,114	41,388	24,509	...	2,165,866
1911...	687,242	507,813	618,954	259,719	140,277	41,853	21,407	1,762	2,279,027

* Statistics not collected prior to 1880.

3. Proportion in the Several States and Territories.—The percentages of the numbers of horses in the several States and Territories on the totals for the Commonwealth for 1901 and the past five years are as follows:—

**PERCENTAGE OF HORSES IN EACH STATE AND TERRITORY ON TOTAL FOR
COMMONWEALTH, 1901 and 1907 to 1911.**

Year.	N.S.W.	Victoria.	Q'sland.	S. Aust.	W. Aust.	Tas.	North'n Terr.	Fed. Cap. Terr.	Common- wealth.
	%	%	%	%	%	%	%	%	%
1901...	30.03	23.90	28.52	10.20	4.55	2.00	0.80	...	100.00
1907...	30.90	22.69	26.10	11.15	6.05	2.16	0.95	...	100.00
1908...	30.66	22.04	26.97	11.07	6.06	2.07	1.13	...	100.00
1909...	29.90	21.89	27.47	11.39	6.19	2.00	1.16	...	100.00
1910...	30.04	21.80	27.42	11.51	6.19	1.91	1.13	...	100.00
1911...	30.15	22.28	27.16	11.40	6.15	1.84	0.94	0.08	100.00

During the period under review, the proportions in South Australia and Western Australia have increased, those in Victoria and Queensland have diminished, while in the case of New South Wales, Tasmania, and the Northern Territory the proportion in 1911 was practically identical with that in 1901.

4. Oversea Export Trade in Horses.—Australia's export trade in horses is a fairly considerable, though somewhat fluctuating, one. During the past five years it has varied in number between 12,632 for the year 1907 and 7807 in 1909, and in value between £319,470 and £173,012 respectively for the same two years. The total number of horses exported during the five years amounted to 52,377, an average of 10,475 per annum. The total value of the exports for the period was £1,192,755, or £238,551 per annum.

The average export value per head for the period was £22 15s. 6d. The numbers exported to the principal countries concerned in this trade are as follows:—

**NUMBER AND DESTINATION OF HORSES EXPORTED FROM THE COMMONWEALTH
1907 to 1911.**

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for 5 years.
	No.	No.	No.	No.	No.	No.
India	9,168	6,296	6,136	9,187	7,416	38,203
Java	954	605	594	450	880	3,483
Straits Settlements ...	991	651	353	605	481	3,081
Philippine Islands ...	295	708	315	727	350	2,395
Ceylon	199	165	97	265	198	924
Mauritius ... ..	...	103	70	403	112	688
Fiji	57	88	114	190	180	629
German S.W. Africa ...	...	622	...	...	...	622
Japan	284	227	1	43	45	600
New Zealand	75	52	31	122	92	372
China	178	38	19	1	13	249
Papua	18	10	17	110	47	202
South African Union ...	167	19	8	1	12	202
Siam ... ..	...	...	...	...	165	165
Hong Kong	5	15	29	...	32	81
Other Countries	241	69	28	57	86	481
Total	12,632	9,668	7,807	12,161	10,109	52,377

The corresponding particulars relative to the value of the horses exported are given in the next table:—

VALUE OF HORSES EXPORTED FROM THE COMMONWEALTH, 1907 to 1911.

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for 5 years.
	£	£	£	£	£	£
India	225,301	198,063	126,686	171,862	135,840	797,757
Java	25,502	16,457	19,598	10,424	19,235	91,216
Straits Settlements ...	26,952	15,491	10,339	21,185	12,939	86,906
Philippine Islands ...	4,949	12,134	5,303	14,971	7,795	45,152
Ceylon	4,886	3,418	2,201	7,486	3,622	21,613
Mauritius ... ..	...	2,385	480	7,191	2,371	12,427
Fiji	1,142	2,356	2,982	4,566	4,788	15,834
German S.W. Africa ...	...	13,255	...	...	...	13,255
Japan	11,715	12,234	60	1,860	2,115	27,984
New Zealand	4,020	3,436	2,847	12,403	17,322	40,028
China	3,299	892	295	60	390	4,986
Papua	337	163	936	2,055	920	4,411
South African Union ...	4,096	931	180	25	500	5,732
Siam ... ..	...	...	...	...	7,298	7,298
Hong Kong	205	545	888	...	800	2,438
Other Countries	7,066	2,453	217	2,016	4,016	15,768
Total	319,470	224,218	173,012	256,104	219,951	1,192,755

It will be seen from the foregoing tables that the export trade in horses with India, the Straits Settlements, and Java has been fairly uniform throughout the five years under review, but that the particulars for some of the other countries specified exhibit marked fluctuations.

The number of horses imported into the Commonwealth is comparatively small, consisting mainly of valuable animals introduced for breeding purposes, and imported principally from New Zealand and the United Kingdom. The average value per head of the horses imported during the five years was £63 1s. 7d., as compared with £22 15s. 6d. per head for the exports for the same period. The average number imported per annum was, however, only 2753, and the average annual value £173,670. The following table furnishes a comparison of imports and exports of horses during the five years 1907 to 1911:—

COMMONWEALTH IMPORTS AND EXPORTS OF HORSES, 1907 to 1911.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1907	516	53,145	12,692	319,470	12,116	266,325
1908	504	71,546	9,668	224,218	9,164	152,672
1909	1,472	88,317	7,807	173,012	6,335	84,695
1910	5,542	307,371	12,161	256,104	6,619	—51,267
1911	5,732	347,973	10,109	219,951	4,377	—128,022
Total for 5 years	13,766	868,352	52,377	1,192,755	38,611	324,403

Note. — signifies value of net imports.

5. **Comparison with other Countries.**—The numbers of horses in some of the leading horse-breeding countries of the world, according to the latest available returns, are as follows:—

NUMBER OF HORSES IN SOME OF THE LEADING HORSE-BREEDING COUNTRIES IN THE WORLD.

Country.	Date.	Number of Horses.	Country.	Date.	Number of Horses.
Russian Empire ...	1910	30,581,202	Uruguay ...	1908	556,307
Utd. States America ...	1909	21,040,000	Bulgaria ...	1905	538,271
Argentine Republic ...	1908	7,531,376	Denmark ...	1909	535,018
Germany ...	1907	4,345,043	Spain ...	1910	519,665
Austria-Hungary ¹ ...	1909 & 1910	3,974,739	Chile ...	1908	516,764
France ² ...	1909	3,160,080	New Zealand ...	1910	404,284
Australia ...	1911	2,279,027	Netherlands ...	1910	327,377
Canada ³ ...	1910	2,213,199	Belgium ...	1909	255,229
United Kingdom ⁴ ...	1911	2,033,216	Cape Colony ...	1904	255,060
British India ⁵ ...	1910	1,553,289	Algeria ...	1909	233,243
Japan ⁶ ...	1909	1,551,156	Servia ...	1905	174,363
Italy ...	1908	906,820	Norway ...	1907	172,468
Rumania ...	1900	864,324	Switzerland ...	1911	143,723
Mexico ...	1902	859,217	Orange River Col ^y ny	1909	132,574
Sweden ...	1909	581,441			

1. Austria 1910, Hungary 1909. 2. Employed on farms. 3. Exclusive of British Columbia.
4. Agricultural horses, unbroken horses, and breeding mares only. 5. Exclusive of Eastern Bengal. 6. Exclusive of Formosa.

6. **Relation to Population.**—In proportion to population, horses are much more numerous in the Northern Territory than in any other of the principal divisions of the Commonwealth. Queensland is next in order, while Tasmania has the smallest number of horses per head. In all cases the number of horses per head of population was somewhat higher in 1911 than in 1901. Particulars for 1901 and the past five years are as follows :—

NUMBER OF HORSES PER HEAD OF POPULATION, 1901 and 1907 to 1911.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Federal Capital Terr.	C'wth.
1901	0.35	0.32	0.91	0.46	0.38	0.18	2.76	...	0.42
1907	0.38	0.34	0.89	0.56	0.45	0.21	4.79	...	0.45
1908	0.38	0.34	0.93	0.55	0.45	0.21	6.09	...	0.46
1909	0.37	0.35	0.96	0.59	0.47	0.21	6.70	...	0.47
1910	0.40	0.36	0.99	0.61	0.48	0.21	7.42	...	0.49
1911	0.41	0.37	0.99	0.62	0.48	0.22	6.59	0.92	0.50

§ 3. Cattle.

1. **Purposes for which Raised.**—In all the States of the Commonwealth cattle-raising is carried out on a more or less extensive scale, the main object in certain districts being the production of stock suitable for slaughtering purposes, and in others the raising of profitable dairy herds. The great impetus which the development of the export trade in Australian butter gave to the dairying industry in the Commonwealth led to a considerable increase in the numbers and quality of the dairy herds of the States of Victoria, New South Wales, and Southern Queensland in particular, the sub-tropical portion of Australia being apparently the best adapted to this industry. On the other hand, by far the finest specimens of beef-producing cattle are those raised in the tropical districts of the Commonwealth, *i.e.*, in the northern parts of Queensland, in the Northern Territory, and in the Kimberley districts in the north of Western Australia.

2. **Distribution throughout Commonwealth.**—Until 1880 New South Wales occupied the leading position in the Commonwealth group as a cattle-raising State, but in that year Queensland forged ahead and obtained a lead which it has since maintained. The extent of this lead has, however, varied considerably, owing principally to the effects produced by the tick fever and droughts, from both of which causes the Queensland herds suffered more severely than those of the other States. In fact, during the period from 1894, when the number of cattle in Queensland attained its maximum of rather more than 7,000,000, to 1903, when the number recorded was less than 2,500,000, an uninterrupted decline was experienced. During the seven years ended 1910, however, a rapid improvement took place, and the total reached on 31st December, 1910, was over 5,100,000. The 1911 figures shew a slight decline, though still a very substantial increase as compared with those of 1909.

The numbers of cattle in the several States and the Northern Territory at quinquennial intervals from 1860 to 1905 and thence onwards for each year are as follows :—

**NUMBER OF CATTLE IN STATES, TERRITORIES AND COMMONWEALTH,
1860 to 1911.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Fed. Cap. Ter.	C'wealth.
1860	2,408,586	722,332	432,890	278,265	32,476	83,366	...	...	3,957,915
1865	1,961,905	621,337	848,346	158,057	45,148	90,020	...	...	3,724,813
1870	2,195,096	721,096	1,076,630	136,832	45,213	101,459	...	...	4,276,326
1875	3,134,086	1,054,598	1,812,576	219,240	50,416	118,694	...	...	6,389,610
1880	2,580,040	1,286,267	3,162,752	283,315	63,719	127,187	*19,720	...	7,523,000
1885	1,317,315	1,290,790	4,162,652	271,478	70,408	138,642	146,562	...	7,397,847
1890	2,091,229	1,782,978	5,558,264	359,938	130,970	162,440	214,094	...	10,299,913
1895	2,150,057	1,795,314	6,822,401	355,867	200,091	162,801	280,957	...	11,767,488
1900	1,988,116	1,602,384	4,078,191	214,761	338,590	165,516	257,667	...	8,640,225
1905	2,337,973	1,737,690	2,963,695	304,027	631,825	206,211	346,910	...	8,528,331
1906	2,549,944	1,804,323	3,413,919	325,724	690,011	211,117	354,371	...	9,349,409
1907	2,751,193	1,842,807	3,892,232	334,671	717,377	215,523	374,683	...	10,128,486
1908	2,955,934	1,574,162	4,321,600	340,376	741,788	205,827	407,992	...	10,547,679
1909	3,027,727	1,549,640	4,711,782	344,034	793,217	199,945	414,046	...	11,040,391
1910	3,140,307	1,547,569	5,131,699	384,862	825,040	201,854	513,383	...	11,744,714
1911	3,185,824	1,647,127	5,073,201	393,566	843,638	217,406	459,780	8,412	11,828,954

* Statistics not collected prior to 1880.

3. **Proportion in each State.**—During the period elapsing between 1901 and 1911 the proportion of cattle in the several States and the Northern Territory has varied considerably, as shewn hereunder :—

**PERCENTAGE OF CATTLE IN EACH STATE AND TERRITORY ON TOTAL FOR
COMMONWEALTH, 1901, and 1907 to 1911.**

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Federal Capital Territory.	C'wealth.
	%	%	%	%	%	%	%	%	%
1901 ...	24.11	19.12	44.43	2.65	4.69	1.99	3.01	...	100.00
1907 ...	27.16	18.20	38.43	3.30	7.08	2.13	3.70	...	100.00
1908 ...	28.02	14.92	40.97	3.23	7.04	1.95	3.87	...	100.00
1909 ...	27.42	14.04	42.68	3.12	7.18	1.81	3.75	...	100.00
1910 ...	26.74	13.18	43.69	3.28	7.02	1.72	4.37	...	100.00
1911 ...	26.93	13.92	42.89	3.33	7.14	1.84	3.89	0.07	100.00

A comparison of the positions of the several States in 1901 and 1911 shews that, while Victoria's proportion of the Commonwealth herds suffered considerable diminution, and those for Queensland and Tasmania a falling off to a slighter extent, fairly large increases are in evidence in New South Wales and Western Australia; South Australia, and the Northern Territory also shew an upward tendency.

4. Imports and Exports of Cattle.—Although the various products of the cattle-raising industry bulk largely in the export trade of the Commonwealth, the export of live cattle from Australia has never been considerable. The number of cattle imported is also small, consisting, as in the case of horses, mainly of valuable animals for breeding. Details are as follows:—

COMMONWEALTH IMPORTS AND EXPORTS OF CATTLE, 1901 and 1907 to 1911.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1901 ...	114	3,591	2,413	22,088	2,299	18,497
1907 ...	183	10,204	687	8,759	504	1,445
1908 ...	112	11,020	953	11,724	841	704
1909 ...	81	5,710	975	9,586	894	3,876
1910 ...	104	8,665	3,745	20,181	3,641	11,516
1911 ...	103	7,806	9,964	45,670	9,861	37,864

Note. — signifies net imports.

The average value of the cattle imported into the Commonwealth during the last five years was £74 9s. 0d. per head, while the average value of the cattle exported during the same period was £5 17s. 6d.

The comparatively large exports for 1911 were due to shipments to Java and Philippine Islands valued at £21,090 and £13,850 respectively. The bulk of these cattle were exported from Western Australia.

5. Cattle Slaughtered.—Complete returns of the number of cattle slaughtered annually in the Commonwealth are not obtainable, as these particulars were collected in Tasmania for Hobart and Launceston only prior to 1911, and were collected in South Australia for the first time in 1908 in respect of the year 1907. Estimates for the missing data for these States have, however, been made, as shewn in the following table:—

CATTLE (INCLUDING CALVES) SLAUGHTERED IN STATES, TERRITORIES AND COMMONWEALTH, 1901 and 1907 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Fed. C. Ter.	C'wealth.
1901	385,823	251,477	377,433	*72,000	39,424	34,000	...	...	1,110,157
1907	380,042	239,709	228,457	60,527	53,505	36,000	...	...	1,048,240
1908	376,574	281,087	243,069	67,369	46,975	36,000	†3,759	...	1,054,833
1909	412,066	287,548	305,026	82,460	49,716	37,000	3,975	...	1,177,791
1910	483,947	319,665	378,514	84,164	55,723	37,000	4,061	...	1,863,074
1911	548,651	347,926	444,264	87,293	75,084	38,000	†4,061	269	1,545,548

*Estimated. † Not available for previous years. ‡ 1910 figures, those for 1911 not available.

For Hobart and Launceston only, the figures for the years 1901 and 1907 to 1910 were, respectively, 8815, 12,087, 11,907, 10,059 and 11,569.

6. **Export of Beef Preserved by Cold Process.**—A large export trade in beef preserved by cold process is carried on by the Commonwealth, mainly with the United Kingdom, the Philippine Islands and the South African Union. The quantities so exported during the five years 1907 to 1911 are as follows:—

**QUANTITY OF BEEF PRESERVED BY COLD PROCESS EXPORTED FROM THE
COMMONWEALTH, 1907 to 1911.**

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ...	8,360,147	12,384,176	52,777,113	61,250,736	81,501,060	246,273,232
Philippine Islands ...	9,626,173	12,826,444	11,260,779	10,020,181	10,336,535	54,070,112
South African Union ...	19,353,278	4,316,387	1,698,046	3,784,637	7,337,652	36,490,000
Russia ...	10,551,438	6,821,701	...	...	...	17,373,139
Egypt ...	1,540,290	1,707,355	2,525,097	1,362,686	1,905,595	9,041,023
Straits Settlements ...	972,507	841,413	1,092,263	1,073,889	1,646,590	5,626,662
Malta ...	781,382	752,761	856,599	862,148	1,526,389	4,779,279
Italy ...	50,456	7,179	90,609	327,056	2,509,466	2,984,766
Hong Kong... ..	286,499	354,934	220,919	385,895	618,688	1,866,935
Gibraltar ...	345,374	...	130,703	70,908	403,626	950,611
Japan ...	5,283	408,141	102,723	22,119	77,223	615,489
Ceylon ...	86,688	87,948	56,509	99,564	151,104	481,813
Hawaiian Islands ...	4,257	...	105,403	71,606	272,559	453,825
Other countries ...	86,820	203,077	225,532	96,103	499,930	1,111,462
Total ...	52,050,592	40,711,516	71,142,295	109,427,528	108,786,417	382,118,348

The value of the beef preserved by cold process exported from the Commonwealth during the same years is as follows:—

**VALUE OF BEEF PRESERVED BY COLD PROCESS EXPORTED FROM THE
COMMONWEALTH, 1907 to 1911.**

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for years.
	£	£	£	£	£	£
United Kingdom ...	87,903	134,014	533,044	967,662	813,393	2,536,016
Philippine Islands ...	108,505	151,076	125,052	126,719	114,989	626,341
South African Union ...	216,088	46,181	18,251	36,559	67,940	385,019
Russia ...	112,098	70,358	...	...	...	182,456
Egypt ...	19,135	19,770	26,747	14,582	19,308	99,542
Straits Settlements ...	11,515	9,820	11,899	12,452	21,065	66,751
Malta ...	8,852	7,987	8,690	9,790	15,412	50,731
Italy ...	553	120	1,002	3,866	26,497	32,038
Hong Kong... ..	3,950	3,873	2,144	3,826	6,370	20,163
Gibraltar ...	4,432	...	1,157	517	3,751	9,857
Japan ...	32	4,494	1,139	205	694	6,564
Ceylon ...	1,422	1,507	601	1,085	1,315	5,880
Hawaiian Islands ...	96	...	1,067	690	4,413	6,266
Other countries ...	1,151	2,351	2,417	1,243	6,985	14,147
Total ...	575,732	451,551	733,210	1,179,146	1,103,132	4,041,771

During the five years under review, the largest of Australia's customers for beef preserved by cold process has been the United Kingdom, while the most consistent and the second largest customer has been the Philippine Islands; the South African Union, Russia and Egypt ranked next in order of importance. The exporting States during 1911 were: Queensland, 97,285,595 lbs., valued at £980,799; New South Wales, 7,294,830 lbs., valued at £76,180; and Victoria, 4,205,992 lbs., valued £45,153.

7. **Comparison with other Countries.**—In the following comparison of the herds of Australia with those of some of the principal cattle-raising countries of the world, the latest available figures have been inserted in each case :—

NUMBER OF CATTLE IN VARIOUS COUNTRIES.

Country.	Date.	No. of Cattle.	Country.	Date.	No. of Cattle.
British India ¹	1910	119,379,298 ²	Denmark	1909	2,253,982
U. S. of America	1909	69,080,000	Bulgaria	1905	2,172,405 ²
Russian Empire	1910	45,762,247	Netherlands	1910	2,026,943
Argentine Republic	1908	29,116,625	New Zealand	1910	2,020,171
Germany	1907	20,630,544	Cape Colony	1904	1,954,390
Austria-Hungary ³	1909-10	16,312,376	Belgium	1909	1,865,883
France	1909	14,297,570	Ceylon	1909	1,509,554 ²
United Kingdom	1911	11,866,111	Switzerland	1911	1,443,371
Australia	1911	11,828,954	Japan ⁵	1909	1,350,404
Uruguay	1908	8,192,602	Egypt	1910	1,347,483
Canada ⁴	1910	7,114,914	Algeria	1909	1,100,586
Italy	1908	6,218,227 ²	Norway	1907	1,094,101
Mexico	1902	5,142,457	Transvaal	1910	989,018
Sweden	1909	2,729,887	Servia	1905	969,953 ²
Rumania	1900	2,588,526 ²	British East Africa	1909	750,000
Spain	1910	2,368,767	Orange River Colony	1909	721,258
Chile	1908	2,303,659	Natal	1909	502,212

1. Exclusive of Eastern Bengal. 2. Including buffaloes. 3. Austria 1910, Hungary 1909.
4. Exclusive of British Columbia. 5. Exclusive of Formosa.

8. **Relation to Population.**—The number of cattle per head of population differs considerably in the several States, and is also subject to marked variation from year to year in the same State. Particulars for 1901 and the past five years are as follows :—

NUMBER OF CATTLE PER HEAD OF POPULATION, 1901 and 1907 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.Aust.	Tas.	Northern Territory.	F. C. Terr.	C'wealth.
1901	1.49	1.34	7.44	0.63	2.06	0.96	54.68	...	2.22
1907	1.81	1.49	7.13	0.90	2.82	1.14	98.03	...	2.43
1908	1.89	1.26	7.76	0.88	2.86	1.08	111.63	...	2.49
1909	1.88	1.21	8.15	0.88	2.99	1.04	117.03	...	2.55
1910	1.91	1.21	8.57	0.95	2.98	1.04	150.86	...	2.65
1911	1.43	1.24	8.26	0.96	2.94	1.14	138.53	4.73	2.63

For the Commonwealth as a whole the ratio of cattle to population is 18 per cent. greater for 1911 than for 1901, and has exhibited a continuous increase from 1902

1911, while the proportion for 1911 is approximately the same as for the previous year. The excess of the 1911 figures over those for 1901 is in evidence in all the States except Victoria, and is most marked in the case of the Northern Territory. In Queensland the ratio has increased very rapidly during the past eight years, the ratio per head of population for 1911 being 72 per cent. greater than for 1903. In Victoria the ratios for the last three years are the lowest for the period under review.

§ 4. Sheep.

1. **The Founding of the Commonwealth Pastoral Industry.**—Fortunately for Australia, the suitability of its climate and general conditions for the production of a high class of wool was, at an early date in the history of its settlement, surmised and tested by Captain Macarthur, one of the pioneer sheep-breeders of New South Wales. To the energy of this enterprising pastoralist is due in large measure the rapid and extremely satisfactory development of Australia as a producer of fine wool, and though it would appear that the introduction of the Merino sheep into Australia was not due to Macarthur, a great deal of the credit for having successfully established the pastoral industry in Australia must certainly be his.

2. **Distribution throughout Commonwealth.**—With the exception of a short period in the early sixties, when the flocks of Victoria outnumbered those of the mother State, New South Wales has maintained amongst the Commonwealth group the lead in sheep production which naturally attached to it as the portion of the Commonwealth in which settlement was first effected. From 1878 onwards, the number of sheep in New South Wales has, in every year except 1902, 1908, 1910, and 1911, represented more than half the total for the Commonwealth, and even in these years it fell but little short of half the total.

The number of sheep in the several States and Territories at quinquennial intervals from 1860 to 1905, and for each year onwards to 1911, is as follows:—

NUMBER OF SHEEP IN STATES, TERRITORIES, AND COMMONWEALTH, 1860 to 1911.

Year.	New South Wales.	Victoria.	Queens- land.	South Aust.	Western Aust.	Tas- mania.	Northern Territory	Fed. Cap. Territory.	Total C' wealth.
1860	6,119,163	5,780,896	3,440,350	2,824,811	260,136	1,700,930	...	...	20,135,286
1865	8,132,511	8,835,380	6,594,966	3,779,308	445,044	1,752,719	...	...	29,539,928
1870	16,308,585	10,761,887	8,163,818	4,400,655	608,892	1,849,775	...	...	41,593,612
1875	25,353,924	11,749,532	7,227,774	6,179,395	881,861	1,731,723	...	...	53,124,209
1880	35,398,121	10,360,235	6,935,967	6,443,904	1,231,717	1,796,715	*9,318	...	62,176,027
1885	37,820,906	10,681,837	8,994,322	6,593,648	1,702,719	1,648,627	49,917	...	67,491,976
1890	55,986,431	12,692,843	18,007,234	7,004,642	2,524,913	1,619,256	45,902	...	97,881,221
1895	47,617,687	12,791,084	19,856,959	6,531,006	2,295,832	1,523,846	73,713	...	90,689,727
1900	40,020,506	10,841,790	10,339,185	5,235,220	2,434,311	1,683,956	48,027	...	70,602,995
1905	39,506,764	11,455,115	12,535,231	6,277,812	3,120,703	1,583,561	61,730	...	74,540,916
1906	44,132,421	12,937,440	14,886,438	6,624,941	3,340,745	1,729,394	36,276	...	83,687,655
1907	44,461,839	14,146,734	16,738,047	6,829,637	3,684,974	1,744,800	44,232	...	87,650,263
1908	43,370,797	12,545,742	18,348,851	6,898,451	4,097,324	1,728,053	54,048	...	87,043,266
1909	46,202,573	12,937,983	19,593,791	6,432,038	4,731,737	1,734,761	43,393	...	91,676,281
1910	45,560,969	12,882,665	20,331,838	6,267,477	5,158,516	1,788,310	57,240	...	92,047,015
1911	44,722,523	13,857,804	20,740,981	6,171,907	5,411,542	1,823,017	50,983	224,764	93,003,521

* Statistics not collected prior to 1880.

3. **Proportion in the Several States and Territories.**—Particulars concerning the relative positions of the several States and Territories with respect to the total flocks of Australia during the years 1901 and 1907 to 1911, and the variations in such positions which have taken place during those years are as hereunder.

During the period the proportion of total Commonwealth flocks declined considerably in the case of New South Wales, and in a less marked degree in South Australia, Tasmania, and the Northern Territory, while in the case of Queensland a marked advance in proportion was experienced, and in Western Australia to a minor extent; Victoria's proportion in 1911 was practically identical with that in 1901.

**PERCENTAGE OF SHEEP IN EACH STATE AND NORTHERN TERRITORY ON TOTAL
FOR COMMONWEALTH, 1901 and 1907 to 1911.**

Year.	N.S.W.	Vic.	Q'sland.	S. Aust.	W. Aus.	Tas.	N. T.	Fed. Cap. Terr.	C'wealth.
	%	%	%	%	%	%	%	%	%
1901 ...	58.10	14.82	13.92	6.95	3.65	2.49	0.07	...	100.00
1907 ...	50.73	16.14	19.10	7.79	4.20	1.99	0.05	...	100.00
1908 ...	49.83	14.41	21.08	7.93	4.71	1.98	0.06	...	100.00
1909 ...	50.40	14.11	21.37	7.02	5.16	1.89	0.05	...	100.00
1910 ...	49.50	14.00	22.09	6.81	5.60	1.94	0.06	...	100.00
1911 ...	48.09	14.90	22.30	6.64	5.82	1.96	0.05	0.24	100.00

4. Oversea Imports and Exports of Sheep.—As in the case of cattle, the overseas exports of live sheep from Australia are of comparatively small importance. The principal countries to which such exports have been consigned during recent years are the South African Union, Straits Settlements, and Papua. The following are the particulars of the imports and exports for the years 1901 and 1907 to 1911 :—

COMMONWEALTH IMPORTS AND EXPORTS OF SHEEP, 1901 and 1907 to 1911.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1901 ...	553	12,134	12,094	12,104	11,541	—30
1907 ...	11,759	42,167	11,361	40,040	—398	—2,127
1908 ...	4,020	18,717	13,021	24,452	9,001	5,735
1909 ...	2,775	14,213	5,315	20,243	2,540	6,030
1910 ...	2,863	14,008	13,144	30,456	10,281	16,448
1911 ...	5,254	25,997	24,219	38,724	18,965	12,727

Note. — signifies net imports.

5. Sheep Slaughtered.—The numbers of sheep slaughtered in the several States during 1901 and 1907 to 1911 are as follows :—

SHEEP (INCLUDING LAMBS) SLAUGHTERED, 1901 and 1907 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.†	N.T.	Fed. Cap. Terr.	C'wealth.
1901	4,519,133	2,469,797	554,705	*678,000	428,534	322,000	...	...	8,972,169
1907	5,185,057	3,226,141	642,740	1,020,355	465,196	336,000	...	...	10,875,489
1908	5,201,492	3,309,865	705,776	1,212,868	423,056	340,000	300	...	11,193,357
1909	6,430,486	3,708,512	1,076,718	1,335,514	491,103	344,000	523	...	13,386,856
1910	7,470,002	4,245,881	1,751,151	1,316,388	549,977	346,000	516	...	15,679,915
1911	6,539,579	4,348,363	981,153	1,275,734	764,636	350,000	‡516	7,346	14,267,327

* Estimated. † Estimated prior to 1911. ‡ Figures for 1910, those for 1911 not available.

For Hobart and Launceston only the figures for the years 1901 and 1907 to 1910 were respectively :—101,627, 107,859, 115,560, 111,445 and 119,456.

6. Exports of Mutton and Lamb Preserved by Cold Process.—Australia's export trade in mutton and lamb preserved by cold process is one which has, in recent years, advanced rapidly, and for the last two years has averaged £1,898,000 per annum. In all the States considerable attention is now being paid to the breeding of a class of sheep that will best meet the requirements of consumers. Crosses between the Merino and the Lincoln, or between the Merino and the Leicester breeds, have proved exceedingly valuable, as they furnish both a good quality of wool and also an excellent carcase for export purposes. The breeding of Shropshire and Southdown sheep with a view to combining meat production with that of wool is also on the increase. Special attention is being paid to the raising of lambs for the home markets, as it is becoming very widely recognised that with suitable breeds, the export trade in lambs is a very profitable one.

Australia's principal customer in this trade is the United Kingdom, which has absorbed 91.5 per cent. of the total quantity exported from the Commonwealth during the past five years. The South African Union and Canada took 2.1 and 1.6 per cent. respectively, while the balance of about five per cent. was principally absorbed by the Philippine Islands, Malta, and the Straits Settlements. An increasing trade is being done with Hong Kong and Ceylon. The quantities exported to various countries are as follows:—

QUANTITY OF MUTTON AND LAMB PRESERVED BY COLD PROCESS EXPORTED
FROM THE COMMONWEALTH, 1907 to 1911.

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom	88,676,913	82,341,131	110,138,905	181,556,597	120,757,079	583,470,625
South African Union	14,445,797	5,323,602	2,458,029	2,720,584	2,657,853	27,605,865
Canada	2,215,533	719,336	1,138,974	2,309,441	2,077,802	8,461,086
Philippine Islands	791,154	673,867	682,116	788,577	859,022	3,794,736
Malta	864,062	487,586	630,313	838,871	699,514	3,520,346
Straits Settlements	511,813	471,634	568,684	713,836	845,079	3,111,046
Egypt	589,210	610,269	455,599	369,611	447,411	2,472,100
Hong Kong	270,325	319,382	323,113	318,590	417,316	1,648,726
Ceylon	172,504	156,291	117,141	254,212	332,011	1,032,159
Hawaiian Islands	196,505	234,412	255,051	145,246	102,361	933,575
Gibraltar	168,453	...	67,190	52,590	99,501	387,734
Japan	35,690	89,805	22,789	18,681	19,885	186,850
Other Countries	289,798	180,299	57,735	142,494	254,461	924,787
Total	109,227,757	91,607,614	116,915,639	190,229,330	129,569,295	637,549,63

The corresponding particulars concerning the values of the exports are:—

**VALUES OF FROZEN MUTTON AND LAMB EXPORTED FROM THE COMMONWEALTH,
1907 to 1911.**

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ...	1,141,718	1,115,908	1,161,475	2,069,932	1,529,633	7,018,666
South African Union ...	159,298	55,293	23,578	28,935	28,365	295,469
Canada ...	30,216	10,257	14,646	23,132	23,027	106,278
Philippine Islands ...	8,674	8,056	6,059	7,878	9,282	39,949
Malta ...	9,437	5,526	6,262	10,140	8,274	39,639
Straits Settlements ...	5,711	5,261	5,488	7,407	9,781	33,648
Egypt ...	7,760	7,801	4,987	4,385	6,248	31,181
Hong Kong ...	3,011	3,487	2,997	3,288	4,581	17,364
Ceylon ...	2,802	1,722	1,096	2,649	3,910	12,179
Hawaiian Islands ...	3,275	2,927	2,994	1,783	1,549	12,528
Gibraltar ...	1,955	...	700	329	829	3,813
Japan ...	384	891	195	240	202	1,912
Other Countries ...	3,261	1,978	558	1,415	2,941	10,153
Total ...	1,877,502	1,219,107	1,231,035	2,161,513	1,633,622	7,622,779

7. Comparison with other Countries.—As regards the size of its flocks and the quantity and quality of wool produced, Australia occupies the foremost position amongst the sheep-raising countries of the world. The following comparison gives the latest available figures relative to the number of sheep in the principal wool-producing countries:—

NUMBER OF SHEEP IN VARIOUS COUNTRIES.

Country.	Date.	No. of Sheep	Country.	Date.	No. of Sheep.
Australia ...	1911	93,003,521	Rumania ...	1900	1,655,444
Argentine Republic ...	1908	67,211,754	British East Africa ...	1909	5,105,000
Russian Empire ¹ ...	1910	62,877,685	Chile ...	1908	4,224,266
United States of America	1909	57,216,000	Mexico ...	1902	3,424,430
United Kingdom ...	1911	30,479,807	Transvaal ...	1910	3,169,708
Uruguay ...	1908	26,286,296	Servia ...	1905	3,160,166
New Zealand ...	1910	23,996,126	Canada ⁴ ...	1910	2,598,470
British India ² ...	1910	23,235,176	Norway ...	1907	1,393,488
Cape Colony ...	1909	18,807,168	Natal ...	1909	1,068,996
France ...	1909	17,357,640	Sweden ...	1909	1,021,719
Spain ...	1910	15,117,105	Netherlands ...	1910	889,036
Italy ...	1908	11,162,926	Denmark ...	1909	726,879
Austria-Hungary ³ ...	1909 1910	10,333,220	Falkland Islands ...	1909	715,651
Algeria ...	1909	9,066,916	Iceland ...	1904	495,190
Bulgaria ...	1905	8,130,997	Uganda ...	1909	471,297
Germany ...	1907	7,703,710	Belgium ...	1895	235,722
Orange River Colony ...	1909	7,481,251	Switzerland ...	1911	159,727

1. Including goats. 2. Exclusive of Eastern Bengal. 3. Austria 1910, Hungary 1909. 4. Exclusive of British Columbia.

8. Relation to Population.—The relation of the flocks of the several States and Territories to the populations at the end of each year 1901 and 1907 to 1911 is as follows:—

NUMBER OF SHEEP PER HEAD OF POPULATION.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas	N.T.	Fed. Cap. Ter.	C'wealth
1901	30.43	8.82	19.80	13.95	13.56	10.23	10.34	...	18.83
1907	29.22	11.48	30.67	18.28	14.48	9.20	11.84	...	21.06
1908	27.99	10.03	32.94	17.88	15.78	9.01	15.13	...	20.57
1909	28.63	10.13	33.91	16.37	17.81	8.98	12.39	...	21.20
1910	27.72	9.90	33.94	15.40	18.63	9.23	17.34	...	20.80
1911	26.74	10.17	33.34	14.76	18.40	9.42	15.70	117.00	20.36

§ 5. Wool.

1. **Importance of Wool Production.**—The chief contributing factor to the pastoral wealth of Australia is the production of wool, the value of the output for the year 1911 being about £28,400,000. Most of the wool produced in the Commonwealth is exported, but with the increased activity of the local woollen mills there has, in recent years, been an increasing quantity used in Australia, although even now the quantity so used represents little more than $1\frac{1}{2}$ per cent. of the whole clip.

2. **Greasy and Scoured Wool.**—In the returns of imports and exports of wool furnished to the Customs Department the quantities are usually shewn as "greasy," or as "scoured and washed," but for the purpose of comparing the clips of the several States or of the Commonwealth as a whole for a series of years, it is convenient to have the total production expressed in terms of greasy wool.

The total quantity of Australian wool scoured and washed before export is, on the average of the last five years, about $20\frac{1}{2}$ per cent. of the total clip. The ratio of loss of weight in scouring varies largely with season, locality, breed, and condition. It seems preferable to express "scoured and washed" wool in terms of "greasy" rather than *vice versa*, since the absolute error arising from any uncertainty as to the average loss of weight has thus the less effect.

3. **Total Production.**—In the following tables, relative to the production of wool for the five calendar years 1907 to 1911, wool returned as "scoured and washed" has been converted into the estimated equivalent amount of "greasy" on the assumption that two pounds of "greasy" wool are on the average required to produce one pound of "scoured and washed" wool. An allowance has also been made for the quantity of wool exported on sheepskins. On this basis the estimated total production of wool (in the grease) for the years 1907 to 1911 may be said to be as in the following table:—

**PRODUCTION OF WOOL, ESTIMATED AS "GREASY," COMMONWEALTH AND STATES,
FOR CALENDAR YEARS 1907 and 1911.**

State.	1907.	1908.	1909.	1910.	1911.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales	375,224,448	344,550,707	379,388,356	}	}
Victoria	120,017,787	98,999,156	112,102,445		
Queensland	104,173,964	115,283,309	127,531,834		
South Australia	57,830,794	52,040,731	56,415,539		
Western Australia	22,013,541	22,450,624	30,048,360		
Tasmania	10,878,478	13,859,755	12,550,598		
Commonwealth	690,139,012	642,184,282	718,037,132	792,868,466	768,572,533

* Details for individual States not available owing to discontinuance by Customs Department of statistics of Interstate trade.

The estimated production of wool in the several States, formerly based on customs returns, being no longer available from that source, an effort has been made to arrive at approximate figures from data collected by the State Statisticians from growers and fell-mongers, etc. The following table gives the estimates so obtained in reference to the past two seasons ended 30th June, 1911 and 1912 :—

ESTIMATED QUANTITY OF WOOL AS IN THE GREASE, SHORN, FELLMONGERED OR ON SKINS SHIPPED DURING THE SEASONS ENDED 30th JUNE, 1911-12.

State.	1910-11.	1911-12.
	lbs.	lbs.
New South Wales*	374,907,068	371,546,415
Victoria ...	101,803,644	110,463,041
Queensland ...	139,250,802	142,382,269
South Australia ...	63,613,781	60,056,470
Western Australia ...	29,984,453	30,833,837
Tasmania ...	11,338,540	10,726,593
Northern Territory ...	400,000	400,000
Commonwealth ...	721,298,288	726,408,625

* Including Federal Capital Territory.

It is to be noted that an evident shortage has occurred in the collection of these statistics, the estimates falling considerably below the approximate quantities obtained from oversea shipments of wool and skins, together with quantity used in local manufactories. The Commonwealth total so obtained represented 758,090,676 lbs. for the season 1910-11, and 785,753,099 lbs. for 1911-12.

4. Wool Locally Used.—Of this production the quantity used in the manufactories of the several States of the Commonwealth was approximately as follows:—

LOCALLY USED WOOL, ESTIMATED AS "GREASY," COMMONWEALTH AND STATES, 1907 to 1911.

State.	1907.	1908.	1909.	1910.	1911.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	963,408	1,020,456	1,095,136	1,594,712	2,401,920
Victoria ...	5,600,873	6,152,250	5,239,806	5,309,730	5,774,868
Queensland ...	211,362	224,460	301,078	270,246	336,486
South Australia ...	603,948	672,112	634,250	564,432	634,238
Western Australia ...	...	...	...	...	...
Tasmania ...	929,572	1,044,879	991,388	1,087,400	986,000
Commonwealth ...	8,309,063	9,114,157	8,261,658	8,826,520	10,133,512

5. Bounties on Combed Wool or Tops Exported.—Under the Bounties Act 1907, bounties are payable on combed wool or tops exported from the Commonwealth, provided they were produced therein. The maximum amount to be paid may not exceed the rate of £10,000 per annum; any unexpended sum may be carried forward and be available for the years following. For the three years commencing 1st January, 1909, the rate of bounty granted is 1½d. per lb.; and for the two years commencing 1st January, 1912, 1d. per lb. is payable. During the year 1908-9, an amount of £326 was paid

in bounties, in 1909-10 £4933, in 1910-11 £8522, while in 1911-12 the amount so distributed was £16,898. The quantities of wool on which these amounts were paid were 52,085, 789,216, 1,863,520 and 3,122,244 lbs. respectively.

Figures shewing the exports of wool tops for the calendar years 1909 to 1911 inclusive will be found at the foot of this page.

6. Exports of Wool.—About forty-five per cent. of the exports of wool from the Commonwealth is despatched to the United Kingdom, the other leading consignees being France, Germany, Belgium, and the United States of America. The following table shews for the years 1907 to 1911 the quantities of "greasy" wool exported from the Commonwealth to the principal countries of destination:—

COMMONWEALTH EXPORTS OF WOOL IN THE GREASE, 1907 to 1911.

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for 5 Years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ...	227,246,663	225,336,019	210,353,060	222,880,179	230,013,473	1,115,829,394
France ...	130,937,517	104,210,690	128,402,229	154,091,890	155,347,112	672,989,438
Germany ...	71,423,340	80,073,180	102,160,121	122,297,188	105,674,113	481,627,942
Belgium ...	56,607,510	37,557,258	47,381,739	63,805,855	58,469,298	263,319,660
United States of America ...	18,401,395	20,430,274	32,846,145	11,079,242	10,154,171	92,911,227
Japan ...	5,905,362	1,872,449	5,320,455	7,869,785	6,583,686	27,652,337
Italy ...	1,546,395	1,548,760	1,915,544	3,710,785	5,644,235	14,365,719
Austria-Hungary ...	49,057	...	22,030	...	5,836,992	5,908,079
India ...	212,759	394,236	271,030	485,990	478,353	1,842,368
New Zealand ...	55,208	62,775	135,964	1,122,446	154,193	1,530,576
Canada ...	264,513	254,300	157,263	208,269	52,299	936,644
Other Countries ...	108,576	6,168	54,643	41,640	415,698	626,725
Total...	512,756,895	471,846,109	529,020,213	587,093,269	578,823,623	2,679,540,109

Similar particulars concerning the exports of "scoured and washed" wool are as follows:—

COMMONWEALTH EXPORTS OF "SCoured AND WASHED WOOL",*

1907 to 1911.

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for 5 Years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ...	38,037,138	46,401,114	34,168,844	35,571,404	35,940,841	190,119,341
France ...	13,607,538	9,383,368	16,651,577	15,861,390	13,989,442	69,493,315
Germany ...	8,649,996	9,104,503	14,583,296	14,145,596	12,148,316	58,631,707
Belgium ...	9,288,704	5,157,465	7,661,482	11,418,885	7,629,001	41,155,547
Japan ...	2,490,953	722,217	635,722	887,222	1,602,747	6,335,531
Italy ...	85,937	65,361	148,695	212,661	397,004	909,658
India ...	151,851	70,828	74,876	41,962	33,321	372,338
United States of America ...	...	645	151,309	5,319	...	157,273
New Zealand ...	1,770	5,871	3,972	32,488	2,934	47,035
Austria-Hungary ...	4,178	...	...	1,113	16,734	22,025
Other Countries ...	...	4,122	2,646	180	10,300	17,248
Total...	72,318,065	70,915,494	74,082,419	78,178,300	71,770,640	367,264,918

* Including "tops." See hereunder.

The figures for "scoured and washed wool" for 1909 include for the first time an export of tops, amounting to 496,492 lbs. and valued at £58,638. In 1910 the corresponding export was 1,123,469 lbs., valued at £134,874, and in 1911, 2,513,106 lbs. valued at £275,406.

The total value of the wool exported from the Commonwealth to each of the various countries during the five years under review was:—

TOTAL VALUE OF WOOL EXPORTED FROM THE COMMONWEALTH, 1907 to 1911.

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom ...	12,933,800	12,022,541	10,562,929	11,447,359	11,159,335	58,125,964
France ...	7,004,581	4,407,940	5,594,983	6,905,177	6,016,293	29,928,974
Germany ...	4,117,394	3,632,708	5,006,623	6,053,873	4,851,785	23,662,383
Belgium ...	3,417,193	1,742,639	2,230,206	3,084,847	2,552,282	13,027,167
United States of America ...	815,254	881,172	1,691,389	579,605	500,015	4,467,435
Japan ...	481,771	125,408	264,630	420,622	459,000	1,751,431
Italy ...	77,413	67,021	97,756	181,457	245,804	669,451
Austria-Hungary ...	2,892		1,025	55	242,461	246,433
India ...	20,115	21,708	16,657	24,268	21,290	104,038
New Zealand ...	2,860	1,669	6,637	67,219	6,199	84,584
Canada ...	11,903	10,873	7,748	10,695	2,824	44,043
Other Countries ...	6,654	557	2,527	2,106	13,905	25,749
Total ...	28,891,530	22,914,236	25,483,110	28,777,283	26,071,198	132,137,652

7. **Care needed in Comparing Clips.**—The Customs returns do not furnish a reliable indication of increase or decrease in successive clips, since in each case they relate to the year ended 31st December. Ordinarily, therefore, they include for any year imports and exports of wool belonging to two distinct clips. A further defect in the comparability of successive clips arises as follows:—Owing to climatic or other conditions, the time of shearing may be so far delayed that one clip may include almost thirteen months' growth of wool, while the succeeding one may include little more than eleven months' growth. An instance of this occurred in some portions of the Commonwealth in connection with the clips of 1906 and 1907. The shearing in the former case was somewhat late, while in the latter it took place at the usual time, the result being that the 1906 clip was above and that of 1907 below the normal.

Similar circumstances operated to make the 1909 clip somewhat higher and the 1910 clip somewhat lower than would have been the case had the interval between successive shearings been exactly a year.

8. **Wool-producing Countries in Southern Hemisphere.**—The next table, compiled by Messrs. Helmuth Schwartz and Co., the well-known firm of English wool brokers, furnishes interesting evidence of the relative importance of the three great wool-producing countries of the Southern Hemisphere. The figures given represent for the respective years the imports of wool into Europe and North America:—

IMPORTS OF WOOL INTO EUROPE AND NORTH AMERICA, 1901 and 1907 to 1911.

Year.	Commonwealth and New Zealand.	Cape Colony.	River Plate.	Total.
	Bales.	Bales.	Bales.	Bales.
1901 ...	1,745,000	217,000	532,000	2,494,000
1907 ...	2,103,000	287,000	478,000	2,868,000
1908 ...	2,072,000	276,000	484,000	2,832,000
1909 ...	2,296,000	330,000	571,000	3,247,000
1910 ...	2,411,000	377,000	461,000	3,249,000
1911 ...	2,524,000	376,000	499,000	3,399,000
1912 ...	2,463,010	463,000	497,000	3,423,000

As the River Plate is much larger than the Australian or Cape bale, a comparison of the number of bales would be somewhat misleading. Allowing approximately for the difference in size of the several bales, it may be said that during the last five years the importations from Australia and the Dominion of New Zealand represent about 65 per cent. of the total.

9. **United Kingdom Importation of Wool.**—The quantity and value of wool imported into the United Kingdom during the year 1911 from the principal wool-producing countries, furnish evidence of the important position which the Commonwealth occupies in the supply of wool to the mother country. This is shewn in the following table:—

IMPORTS OF WOOL INTO THE UNITED KINGDOM, 1911.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	lbs.	£		lbs.	£
Australia ...	323,990,858	14,510,323	Peru ...	2,980,529	118,919
New Zealand ...	174,120,629	7,476,011	Russia ...	2,856,249	109,126
Cape Colony ...	72,342,862	2,764,247	Egypt ...	3,329,271	91,786
France ...	22,544,736	1,406,967	Portugal ...	1,467,416	48,150
British India ...	56,587,549	1,553,085	China ...	2,983,312	100,968
Argentine Republic	50,139,416	1,966,848	Netherlands ...	334,544	11,915
Natal ...	29,509,761	1,047,029	Canada ...	205,068	5,414
Chile ...	20,519,024	649,135	Italy ...	940,385	39,223
Turkey ...	11,939,496	327,876	Persia ...	450,010	12,569
Belgium ...	3,214,902	174,178	Spain ...	303,460	8,778
Germany ...	2,380,076	124,201	Other Countries ...	1,414,804	47,705
U.S. of America ...	1,762,668	71,291			
Falkland Islands	2,577,140	86,423			
Uruguay ...	5,620,685	225,162			
			Total ...	794,514,850	32,977,782

It will be seen that of the total importations of wool into the United Kingdom, Australian wool represented about 41 per cent. of quantity and 44 per cent. of value.

10. The Wool Market.—The market for wool, which had been for some years steadily improving, received a severe set-back in the early portion of the season 1907-8 by the disastrous financial crisis which occurred in America soon after the commencement of that season. The result was that buying was restricted, prices fell, and a considerable quantity of wool was withdrawn from sale and held over until the succeeding season. The season 1908-9 consequently opened rather inauspiciously, but, although prices did not reach the high level attained in 1906-7, the demand, particularly in the latter part of the season, was much more spirited than in 1907-8, and the sales must be regarded as having been very satisfactory. The season 1909-10 opened favourably and prices exhibited a distinctly upward tendency, with the result that the price averaged over 20 per cent. more than was obtained during the preceding year. The 1910-11 season opened with a fall of 10 per cent. on the closing rates of the previous season; values gradually recovered before the middle of the series, when wool was selling almost as well as at any period of the previous year; prices again declined $7\frac{1}{2}$ to 10 per cent., but made a good recovery towards the close of the season, the average for the year being 8 per cent. below that of the previous year. At the commencement of the 1911-12 season values were fully 10 per cent. lower than those ruling at the close of the previous sales. The strained international relationship existing among the European powers was mainly responsible for this. Early in October the market experienced a further decline of $2\frac{1}{2}$ per cent. on good wools and of about 5 per cent. on inferior sorts. Towards the end of that month a hardening tendency was manifested, the increased American demand having a material effect in hastening the improvement. During the middle of the season a further advance on prices was in evidence, and this, with a few slight fluctuations was well maintained throughout the rest of the season. The level of prices throughout 1911-12 was some $7\frac{1}{2}$ per cent. lower than during the previous season.

During the sales of 1911-12 the prices realised for greasy merino wool ranged up to 18 $\frac{1}{2}$ d. per lb. for a few lines of extra super. Western District (Victoria) wool, super. to 14 $\frac{1}{2}$ d., good to 12 $\frac{1}{2}$ d., average to 12d., and inferior from 6 $\frac{1}{2}$ d. to 8d. Amongst other classes of wool extra super. comebacks brought as high as 14 $\frac{1}{2}$ d., and super. 13d. Super. crossbreds sold up to 12 $\frac{1}{2}$ d., fine to 11 $\frac{1}{2}$ d., medium to 9d., and coarse to 9 $\frac{1}{2}$ d. Scoured wool ranged from 15d. to 24 $\frac{3}{4}$ d.

The average values per lb. of Australian greasy wool according to the export returns for the past ten years have been as follows:—

EXPORT VALUE PER LB. OF AUSTRALIAN GREASY WOOL, 1902 to 1911.

Year	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.
Average value per lb.	d. 8.04	d. 8.75	d. 9.30	d. 9.83	d. 10.14	d. 10.73	d. 9.17	d. 9.35	d. 9.58	d. 8.87

(i.) *Exports of Wool from each State and Quantity sold Locally.* Over 84 per cent. of the wool grown in Australia is now sold in the local markets prior to export from the Commonwealth. Buyers from the United Kingdom, France, Germany, and other European countries, also from America, Japan, China, and India attend the sales conducted in Sydney, Melbourne, Geelong, Brisbane, Adelaide, Fremantle, Hobart, and Launceston. The concentration of the trade being a feature decidedly to be desired, it is doubtful whether the tendency towards the multiplication of the Australian markets can be viewed with entire satisfaction; the effect of dividing the buying power must be detrimental to the best interests of both growers and buyers.

The following table shews the number of bales of wool exported oversea from each State during the season ended 30th June, 1912, and the proportion sold at the local sales prior to shipment. It must be noted that considerable quantities of wool grown in some States are sold in or shipped from others, these figures therefore do not shew actual local production, but total oversea shipments and sales. The estimated quantity of wool produced in each State is given in page 346.

**EXPORTS OF WOOL TO PLACES OUTSIDE THE COMMONWEALTH, AND THE
QUANTITY SOLD LOCALLY IN THE SEVERAL STATES, DURING THE
SEASON ENDED 30th JUNE, 1912.**

State.	Overseas Exports.		Sold at Local Sales prior to Export.		Ratio of Local Sales to	
					Overseas Exports from each State.	Total Exports from C'wealth.
	Bales.	%	Bales.	%	%	%
New South Wales	897,551	44.42	773,991	45.52	86.23	38.31
Victoria	562,287	27.83	528,219	31.06	93.94	26.14
Queensland	288,515	14.28	229,345	13.49	79.49	11.35
South Australia	176,985	8.76	147,375	8.67	83.27	7.29
Western Australia	76,874	3.80	1,247	0.07	1.62	0.06
Tasmania	18,335	0.91	20,317	1.19	110.81	1.01
Commonwealth	2,020,547	100.00	1,700,494	100.00	84.16	84.16

It will be seen that in regard to the ratio of local sales to exports, Victoria's sales represent nearly 94 per cent. of her exports, New South Wales about 86, South Australia 83, and Queensland 79½ per cent. In Tasmania some of the wool sold locally was subsequently shipped to interstate ports. Of the total quantity sold in the Commonwealth, New South Wales and Victoria disposed of 45.52 and 31.06 per cent. respectively; Queensland, South Australia, Tasmania, and Western Australia following next in the order named.

During the season under review 2,020,547 bales of wool were shipped from the Commonwealth, of which 84.16 per cent. was sold in the Australian markets. Of this ratio New South Wales and Victoria are represented by nearly 64½, Queensland and South Australia 18½, while Tasmania and Western Australia account for the balance.

(ii.) *Exports of Wool from Commonwealth and Quantity sold Locally.* The number of bales of wool exported from the Commonwealth and sold at local sales prior to shipment during 1895, 1900, 1905, and the five past seasons is shewn in the following table :—

**EXPORTS OF WOOL FROM THE COMMONWEALTH, AND THE QUANTITY SOLD
LOCALLY, FROM 1895 to 1912.**

Year ended 30th June.				Oversen Ex-ports.	Sold prior to Export.	Ratio of Wool sold to Exports.
				Bales.	Bales.	%
1895	...	...	...	1,595,652	817,338	51.22
1900	...	...	...	1,221,163	807,081	66.09
1905	...	...	...	1,218,969	926,940	76.04
1908	...	...	...	1,620,890	1,218,772	75.19
1909	...	...	...	1,796,847	1,449,917	80.71
1910	...	...	...	1,921,705	1,624,561	84.54
1911	...	...	...	1,975,378	1,642,555	83.15
1912	...	...	...	2,020,547	1,700,494	84.16

The steady development of the Australian wool market is clearly shewn in this table. In seventeen years the quantity sold has more than doubled, and the ratio of wool sold to that exported has increased from 51 per cent. in 1895 to over 84 per cent. in the season ended 30th June, 1912.

The first auction sale of wool in Australia took place in Sydney on 23rd September, 1843, and was held by the late Mr. T. S. Mort; it comprised a catalogue of 2 bales.

For many years Melbourne was the chief wool centre of Australia; it was not till the early eighties that Sydney attained the leading position.

During the early history of the wool trade the bulk of the wool sold was purchased on commission for a few Bradford, Scotch, or Continental woollen mills, or by speculators for re-sale in the London market.

The late Mr. Richard Goldsbrough, a man of marked ability, thoroughly trained in the handling of wool, and of unbounded energy and business acumen, perhaps did more than any other man to bring Australia's potentialities as a wool market prominently before the world's buyers and to induce the growers to sell their wool in the Melbourne and Sydney markets.

Numerous French, German, and American houses were attracted to Australia in the early seventies. The American buyers who in 1867-8 shipped only 1200 from Australia, purchased 18,659 bales four years later, while in 1885-6 no less than 20,161 bales went to the United States. The American demand gave a general firmness to the market. French and German buyers competed against them for the best lots. Every year more growers realised the advantage of having a reliable market at their door, and the quantity of wool offering soon assumed large proportions.

Australia was now firmly established as a formidable rival to London for the premier position as a wool distributing centre. Buyers, who had formerly confined their operations to the home markets, realised that a progressive system of auction selling was rapidly being inaugurated in Melbourne and Sydney, and that by buying in Australia they could not only secure their supplies much earlier, but could have the additional advantage of gaining a first selection of the famous Port Phillip and other Australian clips. During the past season 1,700,494 bales of wool were sold in Australia and 226,492 bales in New Zealand, representing the total value of £22,682,000. This enormous quantity far exceeds the sales of any other country in the world.

(iii.) *Distribution of Wool sold in Australian Markets.* The estimated approximate distribution of wool sold in the local markets during the season 1911-12 is shewn in the following table, and exhibits the world-wide representation of buyers at the Australian sales :—

**ESTIMATED APPROXIMATE DISTRIBUTION OF WOOL SOLD LOCALLY IN THE
SEVERAL STATES OF THE COMMONWEALTH DURING THE SEASON
ENDED 30th JUNE, 1912.**

Destination.	N. S. W.	Victoria.	Q'land.	S. Aust. (a)	Tas.	C'wealth.
	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.
United Kingdom ...	92,528	197,008	30,993	62,770	9,220	392,519
France, Belgium, and Holland	311,629	187,298	103,712	50,648	4,858	658,175
Germany ...	263,088	68,362	75,508	12,018	1,812	420,788
Austria, Italy and other Euro- pean Countries ...	51,666	14,424	3,128	102	375	69,695
America ...	10,090	38,100	3,102	906	1,052	53,250
Japan, China and India ...	20,002	1,570	4,135	...	...	25,707
Local Woollen Mills ...	24,988	21,457	8,737	22,178	3,000	32,060
Scourers and Speculators ...						48,300
Total Sales ...	773,991	528,219	229,345	148,622	20,317	1,700,494

PERCENTAGE DISTRIBUTION.

	%	%	%	%	%	%
United Kingdom ...	11.95	37.30	13.51	42.23	45.38	23.08
France, Belgium and Holland	40.26	35.46	45.23	34.08	23.91	38.70
Germany ...	33.99	12.94	32.92	8.09	8.92	24.75
Austria, Italy and other Euro- pean Countries ...	6.68	2.73	1.37	0.07	1.85	4.10
America ...	1.30	7.21	1.35	0.61	5.18	3.13
Japan, China, India ...	2.59	0.80	1.81	...	...	1.51
Local Woollen Mills ...	3.23	4.06	3.81	14.92	14.76	1.89
Scourers and Speculators ...						2.84
Total Sales ...	100.00	100.00	100.00	100.00	100.00	100.00

(a) Including Western Australia, 1,247 bales.

Of the total quantity sold, amounting to 1,700,494 bales, 1,148,658 were purchased for the Continent of Europe, 392,519 for the United Kingdom, 53,250 for America, 25,707 for Asiatic countries, 48,300 by scourers and speculators, while 32,060 bales went for consumption in the local woollen mills. Of the Continental purchases nearly 57 per cent. went to France, Belgium and Holland, 37 per cent. to Germany, and 6 per cent. to Austria, Italy and other European countries.

(iv.) *Quantities of Various Descriptions of Wool Sold in each State.* The quantities and ratios of the various descriptions of wool marketed in each State are shewn in the following tables:—

**PROPORTIONS OF THE VARIOUS DESCRIPTIONS OF WOOL SOLD LOCALLY IN
THE SEVERAL STATES OF THE COMMONWEALTH DURING THE SEASON
ENDED 30th JUNE, 1912.**

Description of Wool:			N S. W.	Vic.	Q'land.	S. Aust. (a)	Tas.	Common- wealth.
			Bales.	Bales.	Bales.	Bales.	Bales.	Bales.
Greasy	...	...	688,500	515,620	186,173	146,781	20,317	1,557,391
Scoured	...	...	85,491	12,599	43,172	1,841	...	143,103
Total	...	...	773,991	528,219	229,345	148,622	20,317	1,700,494
Fleece, etc.	...	...	743,081	492,053	220,632	139,328	19,573	1,614,617
Lambs	...	...	30,960	36,166	8,713	9,294	744	85,877
Total	...	...	773,991	528,219	229,345	148,622	20,317	1,700,494
Merino	...	...	727,552	289,353	226,675	131,090	8,736	1,383,406
Crossbred and all strong breeds	...	...	46,439	238,866	2,670	17,532	11,581	317,088
Total	...	...	773,991	528,219	229,345	148,622	20,317	1,700,494
			%	%	%	%	%	%
Greasy	...	...	89	98	81	99	100	91.6
Scoured	...	...	11	2	19	1	...	8.4
Total	...	...	100	100	100	100	100	100.0
Fleece	...	...	96	93	96	94	96	94.9
Lambs	...	...	4	7	4	6	4	5.1
Total	...	...	100	100	100	100	100	100.0
Merino	...	...	94	55	99	88	43	81.4
Crossbred and all strong breeds	...	...	6	45	1	12	57	18.6
Total	...	...	100	100	100	100	100	100.0

(a) Including 1247 bales sold in Western Australia.

Wool in the grease represented 91½ per cent. of total sales during the period under review. Of fleece and lambs, the former shews about 95, and the latter 5 per cent. The class of wool principally produced is merino, which is almost exclusively grown in

the northern and central parts of the continent, the bulk of the merino wool sold in Victoria coming from Riverina and other parts of New South Wales. Victoria, the southern parts of South Australia and of New South Wales, and Tasmania, produce nearly every bale of crossbred and other strong bred wools.

(v.) *Percentages in each State of Various Descriptions of Wool Sold.* The following table gives the percentages of each description of wool sold in the several States during the season 1911-12 :—

PERCENTAGE OF BALES OF EACH DESCRIPTION OF WOOL SOLD IN THE SEVERAL STATES TO THE TOTAL SOLD IN THE COMMONWEALTH, 1911-12.

Description of Wool.	N.S.W.	Vic.	Q'land.	S. Aust. (a)	Tas.	Common- wealth.
	%	%	%	%	%	%
Greasy ...	44.21	33.11	11.95	9.42	1.31	100.00
Scoured ...	59.74	8.80	30.17	1.29	...	100.00
Fleece, etc. ...	46.02	30.47	13.66	8.64	1.21	100.00
Lambs ...	36.05	42.11	10.15	10.82	0.87	100.00
Merino ...	52.59	20.92	16.38	9.48	0.63	100.00
Crossbred and all strong breeds	14.65	75.33	0.84	5.53	3.65	100.00

§ 6. Hides and Sheepskins.

1. Extent of Trade.—In addition to the hides and sheepskins treated in the tanneries of the several States, a very considerable export trade is carried on, the total value of the hides and sheepskins exported from Australia during the five years 1907 to 1911 being no less a sum than £10,472,823, or an average of £2,094,565 per annum.

2. Sheepskins with Wool.—By far the largest item included in the amount mentioned in the preceding paragraph arises from the value of sheepskins with wool exported, which are shipped principally to France and the United Kingdom. Details concerning the number so exported during the five years 1907 to 1911 are as follows :—

COMMONWEALTH EXPORTS OF SHEEPSKINS WITH WOOL, 1907 to 1911.

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
France ...	3,561,771	3,265,111	3,140,764	4,325,337	4,322,505	18,615,488
United Kingdom	2,711,346	3,522,791	3,968,494	3,763,002	3,306,567	17,272,200
Belgium ...	957,819	710,902	1,100,023	1,282,942	1,020,847	5,072,533
Germany ...	57,909	124,465	57,041	106,534	109,621	455,570
U.S. of America...	27,833	11,041	86,664	155,782	39,811	321,131
Italy ...	6,906	44,083	27,565	29,575	26,140	134,269
Canada ...	4,268	...	...	10,446	...	14,714
New Zealand ...	...	225	...	100	...	325
Other Countries ...	152	...	234	...	6,869	7,255
Total ...	7,328,004	7,678,618	8,380,785	9,673,718	8,892,360	41,893,485

The next table furnishes corresponding particulars as to value:—

**VALUE OF SHEEPSKINS WITH WOOL EXPORTED FROM THE COMMONWEALTH,
1907 to 1911.**

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for 5 Years.
	£	£	£	£	£	£
France ...	760,121	508,477	598,172	884,450	795,259	3,486,779
United Kingdom	628,318	515,937	737,592	710,229	568,618	3,160,694
Belgium	213,988	123,456	274,823	316,958	253,995	1,213,220
Germany	10,446	23,338	9,566	16,720	13,195	73,265
U.S. of America...	5,981	1,058	9,836	16,978	3,706	37,559
Italy ...	2,244	10,621	10,244	9,630	4,075	36,814
Canada...	634	...	1,071	...	...	1,705
New Zealand ...	...	25	...	25	...	50
Other Countries ...	26	...	63	...	697	786
Total ...	1,652,058	1,182,912	1,640,296	1,956,061	1,579,545	8,010,872

3. *Sheepskins without Wool.*—In the case of sheepskins without wool the principal countries to which export takes place are the United Kingdom and the United States of America. Particulars concerning the quantities exported are as follows:—

COMMONWEALTH EXPORTS OF SHEEPSKINS WITHOUT WOOL, 1907 to 1911.

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
United Kingdom ...	2,370,759	1,086,103	1,140,338	875,994	459,252	5,932,446
United States of America	219,296	167,460	1,285,946	710,001	590,582	2,973,285
France ...	2,804	101,767	3,315	23,863	21,666	153,415
New Zealand ...	2,522	5,040	9,840	15,552	9,484	42,438
Germany ...	684	2,812	...	14,447	...	17,943
Belgium ...	1,080	...	...	8,428	331	9,839
Canada ...	600	...	1,068	1,956	...	3,624
Italy ...	72	...	...	...	...	72
Other Countries	1,020	475	...	...	...	1,495
Total ...	2,598,837	1,363,657	2,440,507	1,650,241	1,081,315	9,134,557

Corresponding details concerning value are given hereunder:—

**VALUE OF SHEEPSKINS WITHOUT WOOL EXPORTED FROM THE
COMMONWEALTH, 1907 to 1911.**

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom ...	176,484	62,605	50,077	37,015	17,138	343,319
United States of America	19,191	7,390	57,795	22,544	16,295	123,215
France ...	210	7,477	312	1,711	1,225	10,935
New Zealand ...	248	272	422	514	196	1,652
Germany ...	22	184	...	538	...	744
Belgium ...	103	...	...	396	12	511
Canada ...	37	...	50	115	...	202
Italy ...	8	...	...	...	...	8
Other Countries	72	38	...	...	...	110
Total ...	196,375	77,966	108,656	62,833	34,866	480,696

4. **Hides.**—The Commonwealth trade in hides has now assumed considerable proportions, and during 1911 the total value of hides exported amounted to £611,257. The exports took place principally to the United Kingdom, Belgium, Germany, Italy, the United States of America, and France. Large quantities of hides are also imported into the Commonwealth, mainly from New Zealand and the Pacific Islands. The total value of hides imported during 1911 was £143,893.

Particulars concerning the export of hides during the past five years are as follows:—

COMMONWEALTH EXPORTS OF HIDES, 1907 to 1911.

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
United Kingdom	78,603	152,107	196,827	253,442	345,993	926,972
Belgium ...	52,507	63,377	79,977	41,326	80,453	317,640
Germany ...	22,098	99,745	47,335	21,810	64,536	255,524
Italy ...	36,749	43,156	11,316	45,541	68,991	205,753
U.S. of America...	10,118	15,012	56,131	21,318	29,232	131,811
France ...	2,841	20,971	20,546	11,938	15,790	72,086
Canada ...	4,586	1,050	3,737	4,000	33,519	46,892
Japan ...	5,867	1,670	6,598	4,697	6,436	25,268
Austria-Hungary	3,863	5,998	515	...	103	9,979
Sth. African Union	100	50	200	...	...	350
Other Countries ...	469	24	166	1,975	5,815	8,449
Total ...	217,301	403,160	423,348	406,047	550,868	2,000,724

In the next table are given particulars relative to the value of hides exported:—

VALUE OF HIDES EXPORTED FROM THE COMMONWEALTH, 1907 to 1911.

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom	72,693	106,619	177,738	294,702	279,474	931,226
Belgium ...	57,242	54,674	89,547	48,343	91,110	340,916
Germany ...	21,251	68,413	42,710	23,947	79,530	235,851
Italy ...	28,702	24,891	8,333	41,988	62,047	165,956
U.S. of America...	7,969	12,079	56,639	21,988	28,772	127,447
France ...	2,782	15,205	22,805	11,073	17,988	69,853
Canada ...	4,795	1,127	3,591	4,049	35,320	48,882
Japan ...	11,327	2,235	10,315	7,873	11,060	42,810
Austria-Hungary	3,137	5,360	627	...	161	9,285
Sth. African Union	100	42	260	...	...	402
Other Countries ...	497	23	225	2,087	5,795	8,627
Total ...	210,495	290,668	412,790	456,045	611,257	1,981,255

From the above tables it may be seen that the value per hide exported has increased from 19s. 4½d. in 1907 to 22s. 2d. in 1911, an increase of over 14½ per cent.

The number and value of hides imported into the Commonwealth during the five years 1907 to 1911 are as follows:—

HIDES IMPORTED INTO THE COMMONWEALTH, 1907 to 1911.

Particulars.		1907.	1908.	1909.	1910.	1911.	Total for 5 Years.
No. ...	...	183,678	183,362	136,375	119,408	97,926	720,749
Value ...	£	220,574	204,358	173,251	169,771	143,893	911,847

§ 7. Graphical Representation of Pastoral Production.

1. **General.**—As comparatively complete statistics relative to the number of horses, cattle, sheep and pigs are available from 1860, the graphical representation of the increase in numbers for the Commonwealth as a whole, shewn on page 359, covers the period from 1860 to 1911.

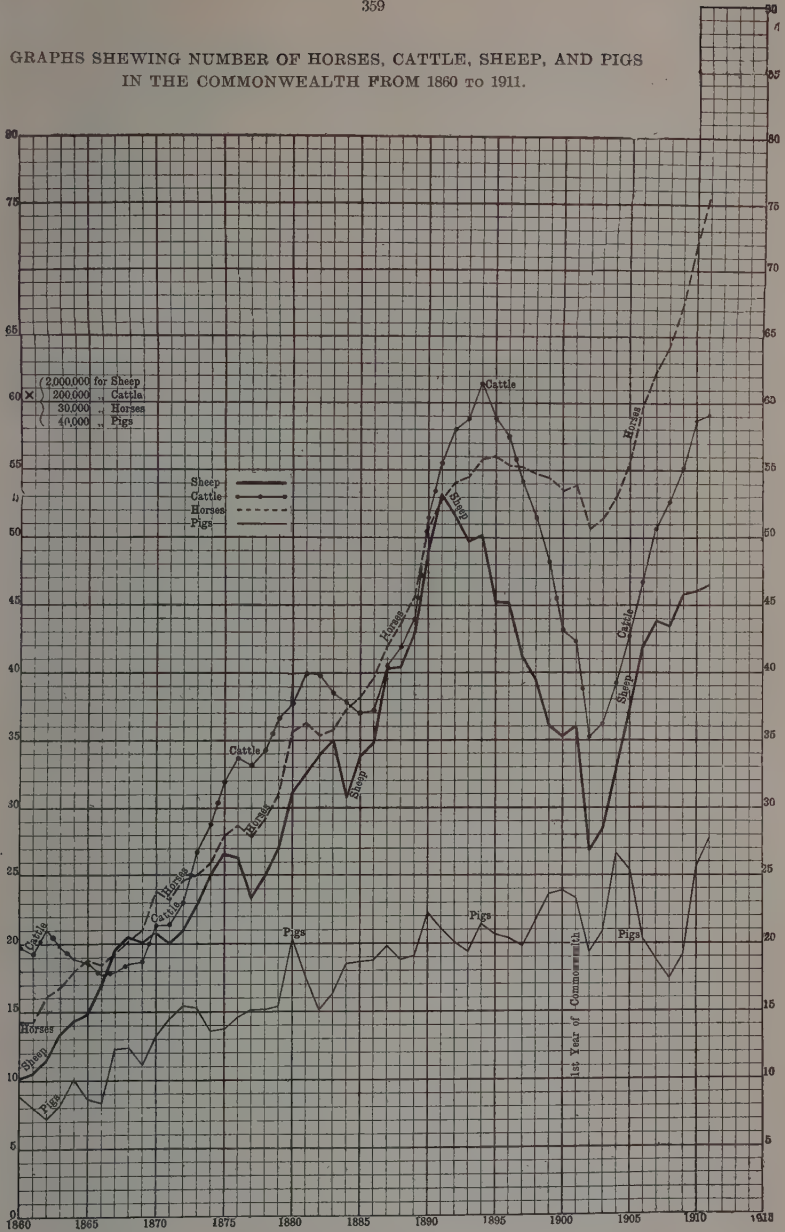
2. **Horses.**—With relatively unimportant fluctuations the number of horses in the Commonwealth increased at a fairly consistent rate until 1895, when a decline set in, culminating in the losses of the disastrous drought of 1902. At this latter point the number was practically identical with that for 1890. From 1902 onwards a rapid improvement has been experienced, and in 1906 the previous maximum attained in 1895 was passed. Previous periods of decline were experienced in 1866, 1871, 1877 and 1882.

3. **Cattle.**—The graph for cattle furnishes evidence of rapid increase in number, interrupted by three marked periods of decline, of which the first extended from 1862 to 1866, the second from 1881 to 1885, and the third from 1894 to 1902. So extensive was this last-mentioned decline that the number receded to that of 1879. Since 1902 a rapid recovery has taken place, and the total for 1911 exceeds that existing at the end of the year 1895, though still short of the maximum attained in 1894.

4. **Sheep.**—In the case of sheep the graph furnishes evidence of four periods in which the upward movement in number has been arrested or reversed. The first of these occurred between 1868 and 1871, the second between 1875 and 1877, the third during 1884, and the fourth, by far the most serious, between 1891 and 1902. From 1902 to 1907 a rapid increase took place, succeeded by a slight decline in 1908, and a rapid advance in 1909, 1910 and 1911. The point now reached is the highest since 1894.

5. **Pigs.**—The graph for pigs exhibits more numerous fluctuations than that for either of the other classes of live stock represented, and from 1904 to 1908 furnished evidence of a persistent decline. In 1909, however, an upward movement took place; and this was well maintained during the two succeeding years, the 1911 returns exceeding all previous records.

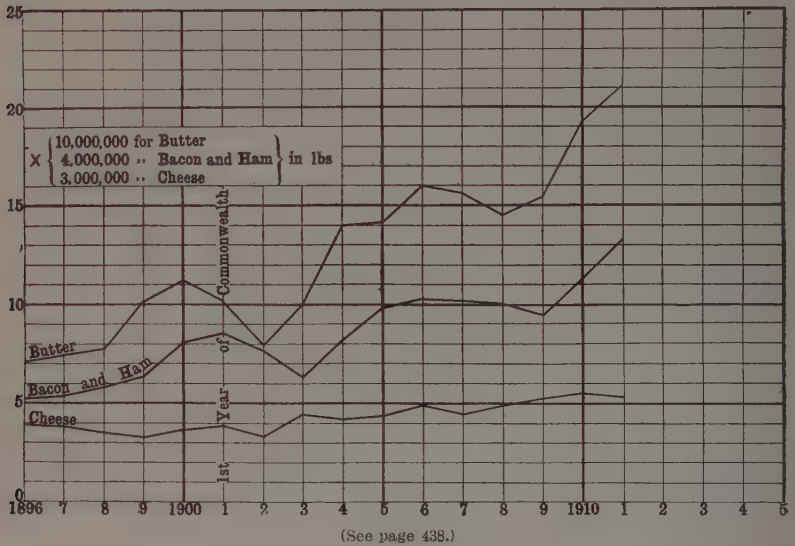
GRAPHS SHEWING NUMBER OF HORSES, CATTLE, SHEEP, AND PIGS
IN THE COMMONWEALTH FROM 1860 TO 1911.



(See pages 334, 338, 342, and 436.)

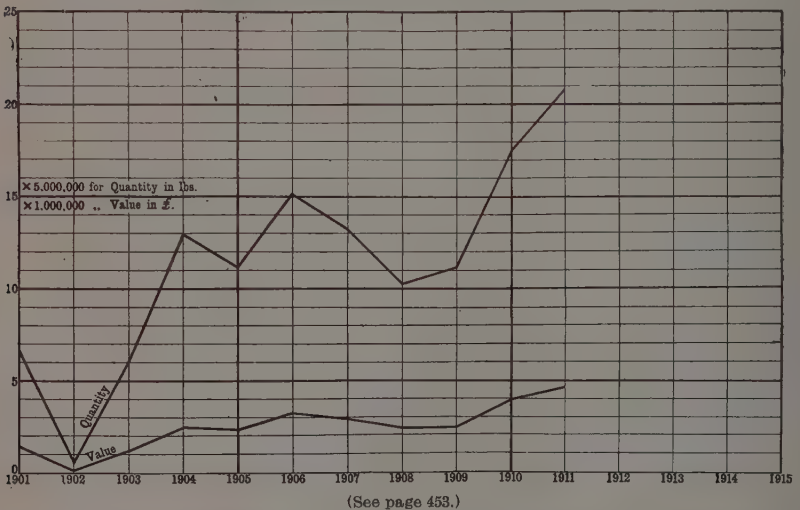
EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year. The totals of the sheep, cattle, horses, and pigs for the Commonwealth are indicated by the several curves or graphs, the vertical side of a small square representing 2,000,000 in the case of sheep; 200,000 for cattle; 30,000 for horses; 40,000 for pigs.

GRAPHS SHEWING THE PRODUCTION OF BUTTER AND CHEESE, AND BACON AND HAM, IN THE COMMONWEALTH, FROM 1896 TO 1911.



EXPLANATION OF GRAPH.—The base of each small rectangle represents an interval of one year, and the vertical height of each small rectangle denotes in the case of butter 10,000,000 lbs.; in the case of bacon and ham, 4,000,000 lbs.; and in the case of cheese 3,000,000 lbs.

GRAPHS SHEWING THE QUANTITY AND VALUE OF NET EXPORTS OF BUTTER FROM THE COMMONWEALTH, FROM 1901 TO 1911.



EXPLANATION OF GRAPH.—The base of each small rectangle represents an interval of one year, and the vertical height of each small rectangle represents 5,000,000 lbs. in weight, or £1,000,000 in value.

SECTION VIII.

AGRICULTURAL PRODUCTION.

NOTE.—Except where otherwise stated the "agricultural" years hereinafter mentioned are taken as ending on the 31st March.

I. Introductory.

1. **Early Attempts at Agriculture.**—The instructions issued to Captain Phillip on the 25th April, 1787, directed him, amongst other things, to proceed as soon as possible to the cultivation of the soil "under such regulations as may appear to be necessary and best calculated for securing supplies of grain and provisions." When the settlers landed at Botany Bay, however, it was found that the glowing accounts published in England by members of Captain Cook's expedition of the fertility of the soil in that locality were considerably overdrawn. Even when Phillip and his company moved round to Port Jackson on the 26th January, 1788, matters were for a time in no better case. The ground in the immediate neighbourhood of the settlement was not suitable for the cultivation of cereal crops, and when the time came to cultivate the soil it was found that there were very few who possessed the slightest acquaintance with the art of husbandry.

2. **The First Sowing.**—In his despatch of the 15th May, 1788, Captain Phillip states that it was proposed to sow eight acres with wheat and barley, although, owing to the depredations of field mice and ants, he was doubtful of the success of the crops.

3. **Discovery of Suitable Agricultural Land.**—A branch settlement was formed at Rosehill, on the Parramatta River, towards the close of 1788, and here corn crops were successfully raised. In his despatch of 12th February, 1790, Phillip refers to the harvest at Rosehill at the end of December, 1789, as consisting of 200 bushels of wheat and 60 of barley, in addition to small quantities of oats, Indian corn, and flax. By the year 1791 there were 213 acres under crop in this locality. In 1792 a new settlement was formed at Toongabbie, about three miles westward of Parramatta, where Phillip states "there are several thousand acres of exceeding good ground." The Hawkesbury Valley, which probably contains some of the richest land in the world, was first settled in 1794. For a long time agricultural operations in Australia were restricted to the narrow belt of country between the tableland and the east coast of New South Wales, as it was not until the year 1813 that a passage was discovered across the Blue Mountains to the fertile plains of the west.

§ 2. Progress of Agriculture.

1. **Early Records.**—In an "Account of Live Stock and Ground under Crop in New South Wales, 19th August, 1797," Governor Hunter gives the acreage under crop as follows:—Wheat, 3361 acres; maize, 1527 acres; barley, 26 acres; potatoes, 11 acres; and vines, 8 acres.

At a muster taken in 1808 the following was the return of crops:—Wheat, 6877 acres; maize, 3389 acres; barley, 544 acres; oats, 92 acres; peas and beans, 100 acres; potatoes, 301 acres; turnips, 13 acres; orchards, 546 acres; and flax and hemp, 34 acres.

By the year 1850 the area under crop had increased to 491,000 acres, of which 198,000 acres were cultivated in what is now the State of New South Wales, and 169,000

acres in Tasmania. At the end of 1850 the area under cultivation in Victoria, which was then the Port Phillip District of New South Wales, was 52,190 acres.

The gold discoveries of 1851 and subsequent years had at first a very disturbing effect on agricultural progress, the area under crop declining from 491,000 acres in 1850 to 458,000 acres in 1854; the area under cultivation in New South Wales decreased by nearly 66,000 acres, while in Tasmania a falling-off of over 41,000 acres was experienced. The demand for agricultural products occasioned by the large influx of population was, however, soon reflected in the increased area cultivated, for at the end of 1858 the land under crop in Australia totalled over a million acres. The largest increase took place in Victoria, which returned an area of 299,000 acres. For the same year South Australia had 264,000 acres in cultivation, Tasmania 229,000 acres, and New South Wales 223,000 acres.

2. Progress of Cultivation since 1860. —The following table shows the area under crop in each of the Commonwealth States and Territories at quinquennial intervals since 1860 and during each year of the period 1906-12. The area under permanent artificially-sown grasses is excluded in all the States, except for the years 1860-79 in the case of New South Wales, where the acreage cannot be separated. During those years, however, the area laid down under permanent grasses could not have been very large:—

AREA UNDER CROP IN AUSTRALIA, 1860-1 to 1911-12.

Season.	New South Wales	Victoria.	Queens- land.	South Australia.	W. Aust.	Tas- mania.	N.T.	F. C. Terr.	Common- wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	260,798	387,282	3,353	359,284	24,705	152,860	...	...	1,188,282
1865-6	378,255	448,194	14,414	547,124	38,180	159,547	...	...	1,585,714
1870-1	426,973	692,810	52,210	801,571	54,527	157,410	...	...	2,183,534
1875-6	451,139	736,520	77,347	1,111,882	47,571	142,547	...	...	2,567,006
1880-1	624,180	1,518,809	113,978	2,057,237	57,707	140,788	...	...	4,577,699
1885-6	737,701	1,867,496	198,334	2,298,412	60,058	144,761	...	...	5,306,762
1890-1	852,701	2,031,955	221,993	2,093,515	69,678	157,376	...	...	5,430,221
1895-6	1,348,600	2,418,235	285,319	2,092,942	97,821	212,703	...	...	6,450,620
1900-1	2,445,564	3,114,132	457,897	2,369,680	201,338	224,352	...	...	8,812,463
1905-6	2,840,235	3,219,962	522,748	2,255,569	364,704	230,237	...	...	9,433,455
1906-7	2,826,657	3,303,586	559,753	2,157,235	460,825	244,744	...	...	9,552,800
1907-8	2,572,873	3,232,523	532,624	2,265,017	493,837	257,028	...	...	9,353,902
1908-9	2,717,085	3,461,761	535,900	2,321,812	585,339	269,346	...	...	9,891,243
1909-10	3,180,561	3,658,535	606,790	2,530,301	722,086	274,026	...	...	10,972,299
1910-11	3,386,017	3,952,070	667,113	2,746,334	855,024	286,920	360	...	11,893,838
1911-12	3,628,513	3,640,241	526,388	2,965,338	1,072,653	270,000	375	3,509	12,107,017

The increase in the area under crop during the past eleven years has been most marked in the case of New South Wales, the total advancing from 2,445,564 acres in the season 1900-1 to 3,628,513 in 1911-12, an increase of 1,182,949 acres. During the same period an increase of 526,109 acres was experienced in Victoria, 871,315 acres in Western Australia, 595,658 acres in South Australia, 68,991 in Queensland, and 45,648 acres in Tasmania. The total area under crop in the Commonwealth increased during the period by 3,294,554 acres, and the total for 1911-12 was the highest ever attained by the Commonwealth. During the past six seasons the percentage of increase was particularly high in Western Australia, viz., 194 per cent. South Australia and New South Wales had an increase of $31\frac{1}{2}$ and $27\frac{3}{4}$ per cent. respectively, while Tasmania and Victoria added to their areas under crop to the extent of $17\frac{1}{4}$ and 13 per cent. During 1911-12 Queensland had over 100,000 acres more under fallow than during any season since 1905-6; this consequently reduced the crop area for that year, which shows less than one per cent. increase during the 6 years.

3. Relation to Population.—From the following table it will be seen that for the Commonwealth as a whole the area under crop has, during the seasons under review, with the exception of 1911-12, increased at a rate which is somewhat greater than that

at which the population of the Commonwealth has increased. This relatively greater increase is in evidence in all the States, being most marked in the case of Western Australia, which has now a larger area under crop per head of population than any State except South Australia. Details for 1901-2 and for the past five seasons are as follows:—

TOTAL AREA UNDER CROP PER 1000 OF POPULATION.

Season	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aus.	Tas.	Northern Territory	Fed. Cap. Terr.	C'with.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2	1,656	2,451	954	6,224	1,123	1,327	...	...	2,200
1907-8	1,691	2,622	976	6,062	1,940	1,356	...	...	2,248
1908-9	1,740	2,769	962	6,018	2,254	1,405	...	...	2,337
1909-10	1,971	2,865	1,050	6,440	2,718	1,419	...	...	2,538
1910-11	2,060	3,037	1,114	6,750	3,089	1,480	109	...	2,688
1911-12	2,169	2,671	846	7,091	3,646	1,896	115	1,827	2,650

1. **Relation to Total Area.**—The next table furnishes a comparison of the area under crop in the Commonwealth and the several States and Territories, with the respective total areas. For the Commonwealth as a whole the area under crop represented for 1911-12 only about one acre in every 157. In Victoria the area under crop was about one acre in every 15, in Tasmania one in 62, in New South Wales one in 55, in South Australia one in 82, in Queensland one in 815, in Western Australia one in 582, in the Northern Territory one in 894, and in the Federal Capital Territory one in 164.

**PERCENTAGE OF AREA UNDER CROP TO TOTAL AREA OF EACH STATE
AND OF COMMONWEALTH FOR SEASONS 1901-2 and 1907-8 to 1911-12.**

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aus.	Tas.	Northern Territory	Fed. Cap. Terr.	C'with.
	%	%	%	%	%	%	%	%	%
1901-2	1.147	5.273	0.113	0.919	0.035	1.386	...	...	0.442
1907-8	1.295	5.747	0.124	0.931	0.079	1.532	...	...	0.491
1908-9	1.368	6.155	0.125	0.955	0.094	1.605	...	...	0.520
1909-10	1.601	6.505	0.141	1.040	0.116	1.633	...	...	0.576
1910-11	1.705	7.026	0.155	1.129	0.137	1.710	0.0002	...	0.625
1911-12	1.832	6.472	0.123	1.219	0.172	1.609	0.0001	0.609	0.636

5. **Artificially-Sown Grasses.**—In all the States considerable areas are devoted to artificially-sown grasses, frequently sown on uncultivated land after burning off. Statistics regarding the area under such grasses are as shewn hereunder:—

AREA UNDER SOWN GRASSES, 1901-2 and 1907-8 to 1911-12.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Fed. Cap. Terr.	Commonwealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2	467,839	162,954	34,679	23,510	3,711	314,422	...	1,007,115
1907-8	736,080	1,095,471	76,943	34,635	7,990	465,673	...	2,416,792
1908-9	807,924	1,029,711	82,784	23,297	10,265	491,422	...	2,445,403
1909-10	888,937	988,671	108,438	23,343	9,017	439,450	...	2,457,856
1910-11	1,055,303	991,195	140,196	26,416	8,348	493,233	...	2,714,691
1911-12	1,119,738	1,041,772	166,175	30,431	5,760	505,940	50	2,869,866

The considerable increase in the area of the grass lands of the Commonwealth is due in large measure to the great development of the dairying industry which has taken place during the last ten years, and which is referred to in the succeeding section. The areas contained in the above table relate in most cases to grasses sown for grazing purposes on uncultivated land, generally after burning off, and are consequently not included with "area under crop."

§ 3. Relative Importance of Crops.

1. **Various Crops.**—In the following table are furnished details concerning the areas in the several States under each of the principal crops for the season 1911-12 :—

DISTRIBUTION OF CROPS IN AUSTRALIA, 1911-12.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	F. C. Terr.	Total for C'wealth
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat	2,379,968	2,164,066	42,962	2,190,782	612,104	37,208	2	742	7,427,834
Oats	70,943	302,238	557	107,881	77,488	57,583	...	167	616,857
Maize	167,712	18,223	153,916	97	29	...	19	69	340,065
Barley—									
Malting	8,037	36,748	1,216	28,419	1,227	5,212	...	...	80,859
Other	2,766	16,793	418	12,324	2,437	869	...	...	35,607
Beans and Peas ...	363	11,535	40	11,873	1,450	23,956	...	...	49,237
Rye	2,320	1,068	19	989	606	805	...	...	5,787
Other Cereals ...	...	...	15	...	44	...	2	...	61
Hay	651,866	860,205	61,299	521,182	344,032	77,466	18	2,220	2,518,288
Green Forage ...	211,693	75,177	93,049	33,673	5,021	5,627	19	181	424,440
Grass Seed ... ..	...	1,188	719	12	...	4,007	...	...	5,926
Orchards & other Fruit Gardens	48,385	59,985	16,817	23,214	18,194	27,868	13	48	194,524
Vines—									
Productive ...	7,227	18,866	1,292	20,705	2,301	...	...	...	50,391
Unproductive ...	1,004	5,327	79	3,281	520	...	...	...	10,211
Market Gardens	9,488	10,331	2,293	2,848	3,120	2,144	56	10	30,292
Sugar Cane—									
Productive ...	5,244	...	95,766	...	...	...	...	...	101,010
Unproductive ...	8,663	...	34,610	...	...	...	...	...	43,273
Potatoes	43,079	47,692	7,688	7,412	2,705	21,818	...	69	130,463
Onions	172	3,652	43	238	41	36	...	...	4,182
Other root crops	712	2,207	3,950	332	269	4,345	4	...	11,819
Tobacco	1,501	356	592	...	...	...	...	...	2,449
Broom Millet ...	2,647	286	680	...	...	...	...	...	3,613
Pumpkins and Melons	3,678	2,328	5,421	...	364	...	...	3	11,794
Hops ... ..	...	122	...	3	...	1,029	...	...	1,154
All other crops	1,025	1,818	2,947	123	701	27	240	...	6,881
Total Area...	3,628,513	3,640,241	526,388	2,965,338	1,072,653	270,000	375	3,509	12,107,017

2. **Relative Areas of Crops in States and Territories.**—Taking the principal crops, *i.e.*, those in the case of which the cultivation amounts to more than 50,000 acres in the Commonwealth, the proportion of each in the various States and Territories to the total area under crop for the season 1911-12 is shewn in the next table. In four of the States, *viz.*, New South Wales, Victoria, South Australia, and Western Australia, wheat-growing for grain is by far the most extensive form of cultivation, while in each of these States the hay crop is second in importance. In New South Wales maize ranks third, but in Victoria, South Australia, and Western Australia, and also in the Commonwealth as a whole, the oat crop occupies third position. In Queensland, on the other hand, the three principal crops in the order of importance are maize, sugar cane, and green forage, while in Tasmania hay, oats, and wheat occupy the leading positions. For the Commonwealth as a whole, the wheat, hay, and oat crops represent over 87 per cent. of the total area under crop.

PROPORTION OF AREA UNDER CHIEF CROPS, 1911-12.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	Federal Capital Terr.	C'wealth
	%	%	%	%	%	%	%	%	%
Wheat ...	65.59	59.45	8.16	73.88	57.06	13.78	0.53	21.15	61.35
Hay ...	17.97	23.63	11.65	17.58	32.07	23.69	4.80	63.27	20.80
Oats ...	1.96	8.30	0.11	3.64	7.22	21.33	...	4.76	5.10
Maize ...	4.62	0.50	29.24	0.00	0.00	...	5.07	1.97	2.81
Green Forage	5.83	2.07	17.68	1.14	0.47	2.08	5.07	5.16	3.51
Orchards and Fruit G'dens	1.33	1.65	3.19	0.78	1.70	10.32	3.47	1.37	1.61
Sugar Cane...	0.38	...	24.77	...	...	...	...	...	1.19
Potatoes ...	1.19	1.31	1.46	0.25	0.25	8.08	...	1.97	1.08
Barley ...	0.30	1.47	0.31	1.37	0.34	2.25	...	...	0.96
Vineyards ...	0.23	0.66	0.26	0.81	0.26	...	...	...	0.50
All Other ...	0.60	0.96	3.17	0.55	0.63	13.47	31.06	0.35	1.09
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

3. **Relative Positions of States and Territories in regard to Principal Crops.**—The relative proportion of acreage of the several crops and position regarding them in each State and Territory is shewn in the following table. New South Wales exhibits the largest area under wheat, maize, and green forage; Victoria the leading position in regard to hay, oats, orchards and fruit gardens, potatoes, barley, and vineyards; and Queensland first in sugar cane and second in maize and green forage. South Australia had the second largest area under wheat, oats, barley, and vineyards; Western Australia third position in oats and fourth in wheat, hay, and vineyards; while Tasmania was third in regard to potatoes, orchards and fruit gardens.

RELATIVE POSITIONS OF THE SEVERAL STATES AND TERRITORIES IN REGARD TO AREA UNDER EACH OF THE PRINCIPAL CROPS DURING THE SEASON 1911-12.

Crop.	N.S.W.	Vict.	Q'land.	S. Aust.	W. A.	Tas.	N. T.	F. C. T.	C'wlth.
Wheat %	32.04	29.14	0.58	29.49	8.24	0.50	...	0.01	100.00
position	1	3	5	2	4	6	8	7	
Hay %	25.88	34.16	2.43	20.70	13.66	3.08	...	0.09	100.00
position	2	1	6	3	4	5	8	7	
Oats %	11.50	49.00	0.09	17.49	12.56	9.33	...	0.03	100.00
position	4	1	6	2	3	5	...	7	
Maize %	49.32	5.36	45.26	0.03	0.01	...	...	0.02	100.00
position	1	3	2	4	6	...	7	5	
Green Forage ... %	49.88	17.71	21.93	7.93	1.18	1.33	...	0.04	100.00
position	1	3	2	4	6	5	8	7	
Orchards and Fruit Gardens... .. %	24.88	30.84	8.65	11.93	9.35	14.33	...	0.02	100.00
position	2	1	6	4	5	3	8	7	
Sugar Cane %	9.64	...	90.36	...	...	...	...	...	100.00
position	2	...	1	...	...	...	...	...
Potatoes %	33.02	36.56	5.89	5.68	2.07	16.73	...	0.05	100.00
position	2	1	4	5	6	3	8	7	
Barley %	9.28	45.97	1.40	34.98	3.15	5.22	...	...	100.00
position	3	1	6	2	5	4	...	...
Vineyards %	13.58	39.92	2.26	39.58	4.66	...	...	...	100.00
position	3	1	5	2	4	...	...	...
All other Crops ... %	16.50	26.28	12.58	12.32	4.96	27.35	...	0.01	100.00
position	3	2	4	5	6	1	8	7	
Total area under crop %	29.97	30.07	4.35	24.49	8.86	2.23	...	0.03	100.00
position	2	1	5	3	4	6	8	7	

4. **Acreage of Principal Crops, Commonwealth.**—The acreage devoted to each of the principal crops in the whole Commonwealth during the last five seasons is shown below :—

ACREAGE OF CHIEF COMMONWEALTH CROPS, 1907-8 to 1911-12.

Crop.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat	5,383,911	5,262,473	6,586,236	7,372,456	7,427,834
Hay	1,811,579	2,452,682	2,228,029	2,258,405	2,518,288
Oats	642,814	676,156	698,448	676,688	616,857
Maize	299,579	323,875	364,585	414,914	340,065
Green Forage	439,725	413,511	306,082	374,862	424,440
Orchards and Fruit Gardens	169,299	173,388	178,798	185,156	194,524
Sugar Cane	144,763	140,883	142,261	155,542	144,283
Potatoes	143,511	125,685	137,070	151,515	130,463
Barley	131,099	140,243	143,013	108,424	116,466
Vineyards	61,232	59,450	58,151	59,114	60,602
All other Crops	126,390	122,897	129,626	136,762	133,195
Total	9,353,902	9,891,243	10,972,299	11,893,838	12,107,017

During the period under review the area devoted to the several crops has varied considerably, that under wheat attaining a maximum in the season 1911-12, and a minimum in 1908-9, while hay also reached its maximum area in 1911-12 and its minimum in 1907-8. Of the other crops maize, sugar-cane, and potatoes attained their maximum areas in 1910-11, oats and barley in 1909-10, green forage and vineyards in 1907-8, and orchards and fruit gardens in 1911-12.

§ 4. Wheat.

1. **Progress of Wheat-Growing.**—(i.) *Acreage.* The area under wheat for grain is given below for each State at various periods since 1860, and is shown diagrammatically in the graph hereinafter :—

AREA UNDER WHEAT, 1860-1 to 1911-12.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	N. T.	F.C. Terr.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	128,829	161,252	196	273,672	13,584	66,450	...	...	643,983
1865-6	131,653	178,628	2,068	410,608	22,249	73,270	...	...	818,476
1870-1	147,997	284,167	2,892	604,761	26,640	57,382	...	...	1,123,339
1875-6	133,609	321,401	4,478	898,820	21,561	42,745	...	...	1,422,614
1880-1	253,138	977,285	12,632	1,733,542	27,686	50,022	...	...	3,054,305
1885-6	264,867	1,020,082	10,093	1,922,555	29,511	30,266	...	...	3,277,374
1890-1	333,233	1,145,163	10,390	1,673,573	33,820	32,452	...	...	3,228,631
1895-6	596,684	1,412,736	27,090	1,649,929	23,241	64,652	...	...	3,774,332
1900-1	1,530,609	2,017,321	79,304	1,913,247	74,308	51,825	...	...	5,666,614
1905-6	1,939,447	2,070,517	119,356	1,757,036	195,071	41,319	...	...	6,122,746
1906-7	1,866,253	2,031,893	114,575	1,686,374	250,283	32,808	...	...	5,982,186
1907-8	1,390,171	1,847,121	82,461	1,753,755	279,609	30,794	...	...	5,383,911
1908-9	1,394,056	1,779,905	80,898	1,693,501	285,011	29,102	...	...	5,262,473
1909-10	1,990,180	2,097,162	117,160	1,895,738	448,918	37,078	...	...	6,586,236
1910-11	2,128,826	2,398,089	106,718	2,104,717	581,862	52,242	2	...	7,372,456
1911-12	2,379,968	2,164,066	42,962	2,190,782	612,104	37,208	2	742	7,427,834

The area devoted in the Commonwealth to the production of wheat for grain was higher for the season 1911-12 than for any previous season. The maximum area under wheat for grain was attained by the several States in the following seasons :—New South Wales, South Australia, and Western Australia 1911-12 ; Victoria, 1910-11 ; Queensland,

1904-5; and Tasmania, 1897-8. The average area under wheat in the Commonwealth in the past ten seasons was 6,113,001 acres. The seasons 1904-5, 1905-6, 1909-10, 1910-11, and 1911-12 exceeded this average, while the remaining five seasons fell short of it. According to the preliminary reports available it appears that the area of wheat reaped for grain in 1912-13 will exceed that for 1911-12, and will probably be about 7,500,000 acres.

(ii.) *Yield.* The production during the same period for each State and for the Commonwealth as a whole is given below:—

PRODUCTION OF WHEAT, 1860-1 to 1911-12.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aus.	Tas.	N. T.	F. C. Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	B'shls.	Bushels.	Bushels.	Bushels.	Bushels.
1860-1	1,581,578	3,153,911	3,126	3,576,503	208,332	1,115,806	...	...	10,245,160
1865-6	1,013,863	3,514,227	33,088	3,587,800	231,594	1,273,766	...	...	9,654,338
1870-1	999,595	2,870,409	99,787	6,961,164	316,769	856,881	...	...	12,064,605
1875-6	1,956,640	4,978,914	97,440	10,733,894	237,171	700,092	...	...	18,712,051
1880-1	3,717,355	9,727,369	223,243	8,604,510	332,232	750,040	...	...	23,356,749
1885-1	2,733,133	9,170,538	51,538	14,612,876	339,376	524,348	...	...	27,431,869
1890-1	3,649,216	12,751,235	207,990	9,393,389	467,389	642,980	...	...	27,118,239
1895-6	5,195,312	5,669,174	123,630	5,929,300	188,077	1,164,855	...	...	18,270,348
1900-1	16,173,771	17,847,321	1,194,058	11,253,148	774,653	1,110,421	...	...	48,353,402
1905-6	20,737,200	23,417,670	1,137,321	27,143,798	2,308,305	776,478	...	...	68,520,772
1906-7	21,817,938	22,618,043	1,108,902	17,466,501	2,758,567	651,408	...	...	66,421,359
1907-8	9,155,884	12,100,780	693,327	19,135,557	2,925,690	644,225	...	...	44,655,673
1908-9	15,483,276	23,345,649	1,202,799	19,397,672	2,460,823	700,777	...	...	62,590,966
1909-10	28,532,029	28,780,100	1,571,589	25,133,851	5,602,368	793,660	...	...	80,413,597
1910-11	27,913,547	34,813,019	1,022,373	24,344,740	5,897,540	1,120,744	20	...	91,111,963
1911-12	25,080,111	20,801,877	285,100	20,352,720	4,358,904	639,615	20	7,991	71,636,347

Owing to unfavourable weather conditions at various times during the growing period, except in isolated districts, the wheat harvest of 1911-12 was a disappointing one. In spite of the fact that a greater area was under crop than during the previous season the production of grain shewed a considerable reduction, amounting to 23,475,636 bushels, an average falling off of 3.26 bushels per acre for the Commonwealth as a whole. The yield for 1911-12 has, however, only been exceeded on three previous occasions, viz., during 1903-4, 1909-10, and 1910-11.

The harvest of 1910-11 was the largest ever reaped in the Commonwealth, and exceeded by no less than 4,698,386 bushels that of 1909-10, the next largest harvest; the 1903-4 yield was 74,149,634 bushels, these being the only three occasions on which a yield exceeding 72,000,000 bushels has been obtained. The only other occasions on which a yield exceeding 60,000,000 bushels has been reaped were the seasons 1905-6, 1906-7 and 1908-9. The prospects for the forthcoming harvest of 1912-13, although not so good as could be desired, are still fair, and it appears probable that the aggregate yield for the season will exceed 79,000,000 bushels. For latest particulars to date of going to press, see Appendix.

(iii.) *Average Yields.* In the next table will be found the average yield of wheat per acre in each of the seasons 1901-2 and 1907-8 to 1911-12 and for the decennium:—

YIELD OF WHEAT PER ACRE, 1901-2 and 1907-8 to 1911-12.

Season.	N.S.W.	Vic.	Q'land.	S. Aus.	W Aus.	Tasmania.	N. T.	F. C. Terr.	C'wealth
	Bushels.	B'shls.	B'shls.	B'shls.	B'shls.	B'shls.	B'shls.	B'shls.	B'shls.
1901-2	10.64	6.91	19.40	4.60	10.10	21.86	...	...	7.54
1907-8	6.59	6.55	8.41	10.91	10.46	20.92	...	...	8.29
1908-9	11.11	13.12	14.87	11.45	8.63	24.08	...	...	11.89
1909-10	14.34	13.72	13.41	13.26	12.48	21.41	...	...	13.73
1910-11	13.11	14.52	9.58	11.57	10.14	21.45	10.00	...	12.90
1911-12	10.54	9.65	6.64	9.29	7.12	17.73	10.00	10.77	9.64
Average for 10 seasons	10.96	10.58	12.16	9.66	10.17	19.76	...	...	10.48

As the above figures shew, there were considerable variations in the average yields, chiefly due of course to the vagaries of the season.

For the Commonwealth as a whole the average yield of 9.64 bushels per acre for 1911-12 was below that for any season since 1907-8. This, however, was only 0.84 below the average yield of 10.48 bushels per acre during the last ten seasons. The highest average yield for any State was in Tasmania with 17.73 bushels per acre. New South Wales, Victoria, and South Australia produced an average of 10.54, 9.65, and 9.29 respectively. Queensland and Western Australia experienced unusually adverse climatic conditions during the year, the average yield for the former State eventually shewing only a little over half, and that of the latter about two-thirds of their average yield per acre during the decennium.

(iv.) *Relation to Population.* During the seasons embraced in the following table, the Commonwealth's production of wheat per head of population has varied between $3\frac{1}{4}$ bushels in 1902-3 and $21\frac{1}{2}$ bushels in 1910-11. The State in which wheat-growing occupies the most important position relatively to population is South Australia, which in 1909-10 had a yield which averaged close upon 64 bushels per head. Queensland is the State in which the average production of wheat per head is least. Particulars for 1901-2 and the past five seasons are as follows:—

AUSTRALIAN WHEAT PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	Fed. Cap. Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bush'ls	Bush'ls	Bushels.
1901-2	10,766	10,023	3,340	22,299	4,943	5,499	...	...	10,082
1907-8	6,017	9,816	1,271	51,211	11,494	3,398	...	...	10,730
1908-9	9,915	18,670	2,159	50,275	9,477	3,655	...	...	14,789
1909-10	17,679	22,537	2,720	63,971	21,087	4,110	...	...	20,910
1910-11	16,981	26,750	1,707	59,835	21,304	5,783	6	...	21,494
1911-12	14,993	15,330	485	48,671	14,817	3,409	6	4,056	15,955

2. *Australian and Foreign Wheat Yields.*—In the next table will be found a statement of the average return per acre in the principal wheat-growing countries of the world, ranging from Belgium with a maximum of $32\frac{1}{2}$ bushels per acre, to Siberia with a minimum of 9 bushels per acre. Australia with approximately 13 occupies an intermediate position:—

AVERAGE YIELD OF WHEAT IN VARIOUS COUNTRIES, 1910.

Country.	Average Yield in bushels per acre.	Country.	Average Yield in bushels per acre.
Belgium ...	32.72	France ...	15.42
Sweden ...	32.48	Spain ...	14.60
Netherlands ...	31.83	United States ...	13.70
United Kingdom ...	30.48	Caucasia ...	13.14
Germany ...	29.29	Italy ...	13.05
New Zealand ...	25.73	Australia ...	12.90
Rumania ...	22.31	India ...	12.80
Japan ...	20.37	Uruguay (1909) ...	12.57
Hungary ...	19.35	Russia in Europe ...	10.78
Austria ...	18.82	Algeria (1909) ...	10.43
Servia ...	16.24	Argentine Republic ...	9.75
Canada* ...	16.14	Siberia ...	9.01
Bulgaria ...	15.71		

* Exclusive of British Columbia.

3. *Wheat Crops of the World.*—The latest available official statistics of the production of wheat in various countries are given in the following table:—

WHEAT YIELD OF VARIOUS COUNTRIES, 1910.

Country.	Yield in Bushels.	Country.	Yield in Bushels.
United States ...	674,301,536	United Kingdom ...	56,598,432
Russia in Europe ...	573,028,800	Austria ...	56,433,968
India ...	359,654,400	Bulgaria ...	42,235,920
France ...	249,703,576	Algeria ...	35,712,697
Hungary ...	181,346,512	Japan ...	23,726,040
Italy ...	153,361,664	Servia ...	15,466,200
Canada* ...	149,989,600	Belgium... ..	12,445,256
Germany... ..	141,844,992	Mexico ...	11,972,680
Argentine Republic	140,505,000	Uruguay... ..	8,592,294
Spain ...	137,410,280	New Zealand†	3,290,221
Caucasia (Russia) ...	124,332,000	Sweden ...	7,219,576
Rumania... ..	107,337,432	Denmark ...	4,376,848
Australia † ...	95,111,983	Netherlands ...	4,304,184
Siberia (Russia) ...	75,912,000		

* Exclusive of British Columbia. † 1911—71,636,347. ‡ 1911—7,261,138.

Various estimates of the total quantity of wheat produced in the world have been made. That furnished by the United States Department of Agriculture gives the following figures for the five years 1907 to 1911:—

WORLD'S PRODUCTION OF WHEAT.

Year	1907.	1908.	1909. "	1910.	1911.
	1,000,000 bushels.	1,000,000 bushels.	1,000,000 bushels.	1,000,000 bushels.	1,000,000 bushels.
Production	3,038	3,091	3,476	3,465	3,415

In this estimate the figures given for Australia and New Zealand relate to the agricultural year ending on 31st March in the year specified.

For the five years referred to, the Australian production of wheat aggregated 359,194,000 bushels, thus representing slightly over 2 per cent. of the world's production. The total quantity of wheat produced in the British Empire during the same period of five years was approximately 2,943,000,000 bushels, so that the Australian production of wheat represented over 12 per cent. of that of the British Empire, while the British Empire production represented nearly 18 per cent. of the world's total.

4. **Prices of Wheat.**—(i.) *British Wheat.* Since the United Kingdom is the largest importer of Australian wheat, the price of wheat in the British markets is a matter of considerable interest to the local producer. The table below gives the average prices per Imperial quarter realised for British-grown wheat:—

PRICES OF BRITISH WHEAT PER QUARTER, 1861 to 1911.

Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.	Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.
	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.
1861 ...	55 4	61 6	50 0	1905 ...	29 8	32 3	26 8
1871 ...	56 8	60 0	52 6	1906 ...	28 3	30 9	25 9
1881 ...	45 4	55 2	40 9	1907 ...	30 7	36 3	26 0
1891 ...	37 0	41 8	32 3	1908 ...	32 0	35 6	30 5
1901 ...	26 9	27 8	25 8	1909 ...	36 11	44 9	31 4
1902 ...	28 1	31 8	24 10	1910 ...	31 8	33 9	29 0
1903 ...	26 9	30 3	24 11	1911 ...	31 8	33 4	30 0
1904 ...	28 4	30 6	26 3				

(ii.) *Australian and other Wheat.* Generally speaking, Australian wheat shows a grain of bright clear texture, rich in gluten, and of fine milling quality. Its excellence is attested by the high price which it realises in the home markets. The statement below shews, for the last five years, the average value per Imperial quarter of the wheat imported into the United Kingdom from the chief producing countries:—

**AVERAGE PRICE OF FOREIGN WHEAT IMPORTED INTO THE UNITED KINGDOM.
1907 to 1911.**

Country.	Average Price per Imperial Quarter.					Country.	Average Price per Imperial Quarter.				
	1907.	1908.	1909.	1910.	1911.		1907.	1908.	1909.	1910.	1911.
	s. d.	s. d.	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.	s. d.	s. d.
Bulgaria ...	25 0	35 10		32 11	35 1	British India ...	33 9	37 8	40 8	33 5	23 7
Australia ...	33 8	37 7	41 5	37 2	34 10	Germany ...	25 0	33 7	38 3	36 11	33 6
Canada ...	24 1	35 1	39 3	36 0	34 10	Russia ...	22 7	28 3	22 3	35 7	23 4
United States ...	33 5	36 2	38 6	37 3	34 9	Argentina ...	31 6	35 6	39 9	31 11	33 1
Rumania ...	30 2	38 5	40 9	34 2	34 7	Chile ...	36 8	35 1	39 1	33 7	33 0

In the next table will be found a statement of the export values of Australian wheat during each of the last ten years:—

EXPORT VALUES OF AUSTRALIAN WHEAT, 1902 to 1911.

Particulars.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.
Price per bushel	3s. 1d.	3s. 1d.	3s. 2d.	3s. 5d.	3s. 3d.	3s. 4d.	4s. 1d.	4s. 2d.	4s. 2d.	3s. 6d.

The export values here shown are the average declared values for the successive years at the several ports of shipment in the Commonwealth.

5. Imports and Exports of Wheat and Flour.—(i.) *Quantities.* The table hereunder shews the imports, exports, and net exports of wheat and flour during 1901 and 1907 to 1911. For the sake of convenience flour has been expressed at its equivalent in wheat, one ton of flour being taken as equal to 50 bushels of grain. During 1903 the Commonwealth imports of wheat and flour were equivalent to 12,607,940 bushels of wheat. This importation was necessitated by the failure of the crop in the preceding season. In ordinary seasons the import of wheat and flour is negligible. During the past five years the export has ranged between 20,900,000 bushels in 1908 and 63,942,390 bushels in 1911, the net exports for that period averaging 42,904,000 bushels.

IMPORTS AND EXPORTS OF WHEAT AND FLOUR, COMMONWEALTH, 1901 and 1907 to 1911.

Year.	Imports.			Exports.			Net Exports.
	Wheat.	Flour.	Total.	Wheat.	Flour.	Total.	
	Bushels.	Eq. Bshls. ¹	Bushels.	Bushels.	Eq. Bshls. ¹	Bushels.	Bushels.
1901	22,992	302,550	325,542	20,260,058	4,840,700	25,100,758	24,775,216
1907	2,010	18,700	20,710	28,784,130	8,171,900	36,956,030	36,935,320
1908	142	8,900	9,042	15,027,388	5,840,150	20,867,538	20,858,496
1909	128	4,000	4,128	31,549,498	6,498,450	38,047,948	38,043,820
1910	325	8,600	8,925	47,761,895	6,997,300	54,759,195	54,750,270
1911	113	12,150	12,263	55,147,840	8,794,550	63,942,390	63,930,127

1. Equivalent in bushels of wheat.

(ii.) *Destination of Exported Breadstuffs.* In the next two tables will be found the principal countries to which the Commonwealth exported wheat and flour during each

year of the period 1907-11. The countries are as shewn in the Australian Customs returns, but owing to the fact that wheat ships are frequently instructed to call for orders at various ports, the countries in which these ports are, cannot be properly considered as the ultimate destination of the whole of the wheat said to be exported to them.

EXPORTS OF WHEAT FROM THE COMMONWEALTH, 1907 to 1911.

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for Five Years.
	Busbels.	Busbels.	Busbels.	Busbels.	Busbels.	Busbels.
U. Kingdom	21,487,355	11,538,962	26,030,722	36,998,625	37,475,188	133,530,852
Sth. African Union ...	4,156,705	2,475,283	3,234,603	3,001,145	2,458,780	15,326,516
Canary Is.*	...	...	238,410	3,280,215	4,756,647	8,275,272
France ...	19,103	19,542	24,803	918,815	5,468,993	6,451,256
Peru ...	1,204,897	253,865	627,417	1,270,360	1,594,610	4,951,149
Belgium ...	57,448	40,810	120,237	1,174,210	1,639,140	3,031,845
Chile ...	568,675	75,617	...	102,025	477,573	1,223,890
Japan ...	313,419	57	61,448	231,320	99,560	705,804
Germany ...	33,278	...	40,403	290,905	255,740	620,326
India ...	31,573	485,078	101,135	...	...	617,786
China ...	599,222	...	42	...	...	599,264
Italy ...	7,773	...	483,783	54,140	...	545,696
Egypt ...	179,132	70,045	...	...	156,485	405,662
Philippine I. ...	...	...	178,153	...	152	178,305
New Zealand	36,340	31,622	72,130	8,410	12,247	160,749
New Caledonia ...	4,153	722	3,275	470	642	9,262
Ceylon ...	4,835	510	308	820	1,325	7,798
Other Countries ...	80,222	35,275	332,629	430,435	750,758	1,629,319
Total ...	23,784,130	15,027,388	31,549,493	47,761,895	55,147,840	178,270,751

* For orders.

The exports of flour during the same period and the principal countries of destination are as follows:—

EXPORTS OF FLOUR FROM THE COMMONWEALTH, 1907 to 1911.

Country to which Exported.	1907.	1908.	1909.	1910.	1911.	Total for Five Years.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Sth. African Union	23,208	23,662	24,460	29,535	35,136	141,001
United Kingdom	7,181	13,545	33,128	23,323	24,616	101,793
Java ...	17,320	13,492	13,346	18,808	30,964	93,930
Portuguese East Africa ...	22,678	17,689	16,496	22,517	8,421	87,801
Philippine Islands	16,947	9,790	11,803	9,359	16,634	64,533
Straits Settlements	13,133	5,665	6,250	12,374	22,036	64,458
Hong Kong ...	25,332	481	1,511	1,742	5,687	34,753
New Zealand ...	6,427	14,464	5,439	3,148	2,818	32,296
New Caledonia ...	4,293	4,056	3,897	4,049	4,174	20,469
Mauritius ...	2,579	3,461	3,090	2,894	1,974	13,998
Ceylon ...	2,345	2,716	2,257	2,237	3,046	12,651
China ...	6,479	363	300	816	1,656	9,614
Fiji ...	1,362	...	1,810	1,760	2,230	7,162
Japan ...	491	1	337	815	269	1,913
Other Countries ...	3,663	7,418	5,845	6,519	16,230	39,675
Total ...	163,438	116,803	129,969	139,946	175,891	726,047

During the five years under review the export of wheat to the United Kingdom totalled 133,530,852 bushels or about 75 per cent. of the total export for the period. On the other hand, the export of flour to the United Kingdom aggregated only 101,793 tons or about 14 per cent. of the total export. During the five years the heaviest exports of flour have been to South Africa, the United Kingdom, Java, Portuguese East Africa, the Philippine Islands, the Straits Settlements, and Hong Kong.

(iii.) *Exports of Wheat and Flour.* From the foregoing returns it will be seen that the quantity of Australian wheat exported in the form of flour during the past five years represents, on the average, about 17 per cent. of the total equivalent in wheat exported as wheat or flour from the Commonwealth. One cause of this, and probably the chief one, is the fact that Australian wheats are in considerable demand with the English millers for mixing purposes, while the Australian flour has not, up to the present, received that consideration from the English bakers which its admitted qualities undoubtedly merit. Steps which have recently been taken for bringing these qualities before the British public may possibly have the effect of increasing the proportion of wheat exported in the form of flour.

A point of some interest in connection with the export of wheat, and one which bears also on the proportions of wheat and flour exports just referred to, is that concerning the quantity of phosphoric acid which this export has the effect of removing from the Commonwealth, and the necessity which exists for the return to the soil of this substance in some form.

According to an estimate furnished by the chemist to the New South Wales Department of Agriculture (F. B. Guthrie, Esq., F.C.S., etc.), the proportions of milled product from a bushel (60 lbs.) of wheat are, approximately, 42 lbs. of flour, 9 lbs. of bran, and 9 lbs. of pollard, while the percentage of phosphoric acid contained in these products is as follows:—

Flour	...	...	0.32 per cent., or 0.13 lbs. per bushel.
Bran	...	...	3.00 " 0.27 "
Pollard	...	...	0.90 " 0.08 "

The total amount of phosphoric acid contained in a bushel of wheat is, therefore, 0.48 lbs., of which 0.13 lbs. is in the flour and 0.35 lbs. in the offal.

During the past ten years the net exports from the Commonwealth of wheat and its milled products have amounted to 267,761,805 bushels of wheat, 1,108,287 tons of flour, and 4,905,311 bushels of bran, pollard, and sharps. On the basis of the figures quoted above this export would contain no less than 137,500,000 lbs. of phosphoric acid, the value of which as a fertiliser would be about £860,000.

6. Value of the Wheat Crop.—The estimated value of the wheat crop in each State and in the Commonwealth during the season 1910-11 is shewn below:—

VALUE OF THE WHEAT CROP,* 1911-12.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	F. C. T.	C'w'lth.
	£	£	£	£	£	£	£	£	£
Aggregate value	4,593,025	3,917,227	49,894	3,858,469	762,908	115,433	5	1,465	13,303,326
Value per acre	£1/18/8	£1/16/2	£1/3/3	£1/15/3	£1/4/11	£3/2/0	£2/10/0	£1/19/6	£1/15/10

* Exclusive of the value of straw.

§ 5. Oats.

1. Progress of Cultivation.—Oats comes next in importance to wheat amongst the grain crops cultivated last season, but while wheat grown for grain accounted for over 61 per cent., oats represented only 5 per cent. of the area under crop in the Commonwealth. The progress of cultivation of oats since 1860 is shewn in the table hereunder, and more fully in the graphs hereinafter:—

CULTIVATION OF OATS, 1860-1 to 1911-12.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	F. C. T.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	6,535	86,337	7	2,273	507	30,303	...	125,962
1865-6	10,939	102,817	348	2,872	1,232	28,538	...	146,746
1870-1	10,683	149,309	122	6,188	2,095	30,946	...	199,343
1875-6	18,856	124,100	114	3,640	1,256	32,556	...	180,522
1880-1	17,923	134,089	116	4,355	1,319	19,853	...	177,655
1885-6	14,117	215,994	208	7,871	1,596	29,247	...	269,033
1890-1	14,102	221,048	411	12,475	1,934	20,740	...	270,710
1895-6	23,750	255,503	922	34,093	1,880	32,699	...	348,852
1900-1	29,383	362,689	385	27,988	4,790	45,073	...	470,308
1905-6	38,543	312,052	533	56,950	15,713	42,776	...	466,567
1906-7	56,431	380,493	1,236	57,000	28,363	58,320	...	581,843
1907-8	75,762	398,749	715	66,297	46,667	54,625	...	642,815
1908-9	59,881	419,869	1,797	78,494	59,461	56,654	...	676,156
1909-10	81,452	384,226	2,789	85,346	73,342	71,293	...	698,448
1910-11	77,991	392,681	2,537	77,674	61,918	63,887	...	676,688
1911-12	70,943	302,238	557	107,881	77,488	57,583	167	616,857

2. **Total Yield.**—The total oat crop of the several States for the same period is furnished in the following table:—

COMMONWEALTH OAT CROP, 1860-1 to 1911-12.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Cap. Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bush'ls	Bushels.
1860-1	98,814	2,633,693	91	52,989	11,925	926,418	...	3,723,930
1865-6	116,005	2,279,468	4,524	42,642	19,005	688,740	...	3,150,384
1870-1	119,365	2,237,010	1,586	88,383	39,974	691,250	...	3,177,568
1875-6	352,966	2,719,795	1,482	60,749	18,840	827,043	...	3,980,875
1880-1	356,121	2,362,425	2,081	50,070	21,104	439,446	...	3,231,247
1885-6	279,107	4,692,303	1,006	97,201	23,142	784,325	...	5,877,084
1890-1	256,659	4,919,325	8,967	116,229	38,791	519,395	...	5,859,366
1895-6	374,196	2,880,045	10,887	184,012	19,326	906,934	...	4,375,400
1900-1	593,548	9,582,332	7,855	366,229	86,433	1,406,913	...	12,043,310
1905-6	883,081	7,232,425	5,858	869,146	283,987	1,200,024	...	10,474,521
1906-7	1,404,574	8,845,654	28,884	896,166	457,155	1,979,574	...	13,612,007
1907-8	851,776	5,201,408	9,900	874,388	721,753	1,526,002	...	9,185,227
1908-9	1,119,558	11,124,940	38,811	1,280,235	739,303	1,946,010	...	16,218,857
1909-10	1,966,586	7,913,423	50,018	1,209,131	1,248,162	2,347,548	...	14,784,868
1910-11	1,702,706	9,699,127	50,469	1,136,618	776,233	2,063,303	...	15,428,456
1911-12	1,152,827	4,585,326	5,783	1,349,480	961,385	1,504,633	2,337	9,561,771

The principal oat-growing State of the Commonwealth is Victoria. During the past five seasons it has produced about 59 per cent. of the total quantity of oats grown in the Commonwealth; Tasmania, New South Wales, South Australia, and Western Australia come next in order of importance. In New South Wales, Western Australia and Tasmania, the highest production of oats for any season was that of 1909-10, while Victoria and Queensland experienced a maximum yield in 1903-4, and South Australia in 1911-12. For the Commonwealth as a whole the record yield was that of 17,541,210 bushels in the season 1903-4, while the yields of 16,248,857 and 15,428,456 for 1908-9 and 1910-11 respectively, rank second and third.

3. **Average Yield.**—The average yield per acre of the oat crop of the Commonwealth varies considerably in the different States, being highest in Tasmania and lowest in South Australia. Particulars as to average yield for the past ten seasons are given in the succeeding table:—

AVERAGE YIELD OF OATS PER ACRE.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Cap. Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	21.31	20.43	27.50	13.54	16.78	31.48	...	21.22
1907-8	11.24	13.04	13.85	13.19	15.47	27.94	...	14.29
1908-9	18.70	26.50	21.60	16.31	12.43	34.85	...	24.03
1909-10	24.14	20.60	17.93	14.17	17.02	32.93	...	21.10
1910-11	21.83	24.70	19.89	14.63	12.54	32.30	...	22.80
1911-12	16.25	15.17	10.38	12.51	12.41	26.13	13.99	15.50
Average for 10 Seasons	19.02	20.69	20.16	14.09	14.54	30.33	...	20.26

The smallest average yield per acre for the Commonwealth for the period was that experienced in the season 1902-3, being 12.32, while the largest was that of the succeeding season amounting to 28.25 bushels per acre.

4. **Relation to Population.**—The State in which oat production occupies the most important position in relation to population is Tasmania, the yield for that State representing for 1911-12 about 7½ bushels per head, as compared with 2 bushels per head for the Commonwealth as a whole. Particulars for the seasons 1901-2 and 1907-8 to 1911-12 are furnished in the succeeding table:—

OAT PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Federal Capital Territory.	C'wealth
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	500	5,558	83	1,306	845	9,734	...	2,559
1907-8	560	4,219	18	2,340	2,836	8,049	...	2,207
1908-9	717	8,897	70	3,318	2,847	10,150	...	3,889
1909-10	1,219	6,197	87	3,077	4,638	12,156	...	3,408
1910-11	1,036	7,453	84	2,794	2,804	10,646	...	3,487
1911-12	689	3,365	9	3,227	3,268	7,777	1,217	2,093

5. **Value of Oat Crop.**—The estimated value of the oat crop of the several States of the Commonwealth for the season 1911-12 is as follows:—

VALUE OF OAT CROP,* 1911-12.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	F.C. Terr.	C'wealth.
Aggregate value	£201,741	£706,904	£1,012	£185,554	£136,196	£231,964	£409	£1,463,780
Value per acre	£2/16/11	£2/6/9	£1/16/4	£1/14/5	£1/15/2	£4/0/7	£2/9/0	£2/7/6

* Exclusive of the value of straw.

6. **Imports and Exports.**—The production of oats in the Commonwealth has not yet reached such a stage as to admit of a regular export trade in this cereal; in fact in certain years the imports have exceeded the exports, notably in 1903, 1906, and 1908. The quantities and values of oats imported into and exported from the Commonwealth during the years 1901 and 1907 to 1911 are given hereunder:—

COMMONWEALTH IMPORT AND EXPORT OF OATS, 1901 and 1907 to 1911.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901	1,526,599	159,674	2,874,334	285,347	1,347,735	131,673
1907	21,945	2,850	533,485	60,204	511,540	57,354
1908	1,401,870	206,283	67,058	10,594	1,334,812	195,689
1909	320,543	32,607	339,258	35,375	18,715	2,768
1910	19,510	2,282	129,490	14,893	109,980	12,661
1911	4,522	639	391,465	46,493	386,943	45,854

Note. — signifies net imports.

The principal countries from which the Commonwealth imports of oats have been obtained are the Dominion of New Zealand and the South African colonies, while the principal countries to which oats were exported during the period under review were the South African colonies in the earlier, and the United Kingdom, the Philippine Islands, India, and New Zealand in the later years.

7. **Oatmeal, etc.**—Importations of oatmeal, etc., into the Commonwealth take place principally from the United Kingdom, the United States, and Canada. The total importations of oatmeal, wheatmeal, and rolled oats during 1911 amounted to 384,061 lbs., and represented a value of £7185.

8. **Comparison with other Countries.**—A comparison of the Australian production of oats with that of the leading oat-producing countries of the world, is furnished in the following table:—

PRODUCTION OF OATS IN VARIOUS COUNTRIES, 1910.

Country.	Quantity of Oats produced	Country.	Quantity of Oats produced	Country.	Quantity of Oats produced.
	Bushels.		Bushels.		Bushels.
United States ...	1,092,511,344	U'd. Kingdom	175,794,312	Argentina ...	33,399,080
Russian Empire	855,567,696	Austria ...	122,637,360	Rumania ...	28,730,960
Germany ...	446,472,528	Sweden ...	72,912,400	Netherlands	17,481,504
Canada* ...	323,449,000	Hungary ...	61,288,824	Australia ...	15,428,456
France ...	281,789,752	Denmark ...	39,074,848	New Zealand	10,118,917

* Exclusive of British Columbia.

9. **Comparison of Yields.**—The average yield per acre of oats in Australia is a somewhat low one compared with the results obtained in other countries, where the cultivation of this cereal is more extensively carried on. Arranging the countries contained in the foregoing table, with the exception of Denmark, for which particulars are not available, according to the magnitude of the average yield of oats for the year 1910, the results are as follows:—

YIELD OF OATS PER ACRE, 1910.

Country.	Average per Acre.	Country.	Average per Acre.	Country.	Average per Acre.
	Bushels.		Bushels.		Bushels.
Netherlands ...	50.19	Canada* ...	32.79	Rumania...	26.04
United Kingdom...	42.93	United States ...	30.96	Argentina ...	23.61
Germany ...	42.14	France ...	28.87	Australia...	22.80
New Zealand ...	33.41	Austria ...	27.09	Hungary...	21.28
				Russian Empire...	18.07

* Exclusive of British Columbia.

10. **Price of Oats.**—The average wholesale prices of oats in the markets of the several capitals for the year 1911 are given in the following table:—

AVERAGE WHOLESALE PRICE OF OATS PER BUSHEL, 1911.

Particulars.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
Average price per bushel ...	s. d. 2 8	s. d. 2 3	s. d. 3 5	s. d. 2 3	s. d. 2 11	s. d. 2 4

§ 6. Maize.

1. **States Growing Maize.**—The only States in which maize is at all extensively grown for grain are those of New South Wales and Queensland, the area so cropped in these two States during the season 1911-12 being 321,628 acres, or nearly 95 per cent. of the total for the Commonwealth. Of the balance, Victoria contributed 18,223 acres, South Australia 97 acres, Western Australia 29 acres, and the Northern Territory 19 acres. The climate of Tasmania prevents the growing of maize for grain in that State. In South Australia prior to 1908 particulars concerning maize had not been specially asked for on the form used in the collection of agricultural statistics. In all the States maize is grown to a greater or less extent as green forage, particularly in connection with the dairying industry.

2. **Area under Maize.**—The area devoted to the growing of maize for grain in each State, from 1875 onwards, is given in the following table, and the actual fluctuations from year to year are shewn more fully on the graph hereinafter.

The total area under maize in the Commonwealth exceeded 300,000 acres for the first time in the season 1890-1, and although it fluctuated somewhat during the succeeding seventeen years, it may be considered to have remained at about that figure. The greatest divergence during the period occurred in 1903-4, when a record total of 371,906 acres was harvested. For 1908-9 and the two following seasons a continuous increase in the area devoted to maize was in evidence, and the total of 414,914 acres for 1910-11 is the highest ever attained. The unfavourable weather conditions during 1911-12 resulted in the acreage under maize for that season being reduced by 74,849 acres as compared with its predecessor. The area cropped with maize in New South Wales, which had declined rapidly from a maximum of 226,834 acres in 1903-4 to 160,980 acres in 1907-8, shewed a marked improvement in each of the three following seasons, the acreage under this crop for 1910-11 being the highest on record, viz., 213,217 acres; a decline of 45,505 acres was, however, in evidence in the following season, when an area of 167,712 acres was cropped. In Queensland the area appears to be on the increase, that for 1910-11 being the highest ever attained in that State, while with this exception 1911-12 exceeded all previous records. The area under maize in New South Wales in 1911-12 represents only $4\frac{1}{2}$ per cent. of that State's total area under crop, while in the case of Queensland the maize crop represents over 29 per cent. of the total.

AREA UNDER MAIZE, 1875-6 to 1911-12.

Season.	N.S.W.	Victoria.	Queensland.	South Aust.	W. Aust.	N. T.	F. C. Terr.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1875-6	117,582	2,346	38,711	...	60	...	...	158,699
1880-1	127,196	1,769	44,109	...	32	...	...	173,106
1885-6	132,709	4,530	71,741	...	120	...	...	209,100
1890-1	191,152	10,357	99,400	...	81	...	...	300,990
1895-6	211,104	7,186	100,481	...	23	...	...	318,794
1900-1	206,051	9,389	127,974	...	91	...	...	343,505
1905-6	189,353	11,785	113,720	...	43	...	...	314,901
1906-7	174,115	11,559	139,806	...	101	...	...	325,581
1907-8	160,980	10,844	127,119	*549	87	...	...	299,579
1908-9	180,812	14,004	127,655	1,223	181	...	...	323,875
1909-10	212,797	19,112	132,313	210	153	...	...	364,585
1910-11	213,217	20,151	180,862	619	46	19	...	414,914
1911-12	167,712	18,223	153,916	97	29	19	69	340,065

* Particulars for previous years not available.

3. Total Yield.—The average yield per acre of this cereal, in common with the majority of crops, evinced a considerable falling off in the season 1911-12, the quantity harvested, 9,039,855 bushels, being some 70 per cent. of the production of the previous season. The 1910-11 crop was, however, a record one, and exceeded 13,000,000 bushels. The average annual production of maize during the last decade was 9,078,678 bushels. Particulars concerning the yield from 1875 onwards are as hereunder:—

MAIZE CROP, 1875-6 to 1911-12.

Season.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	N. T.	F. C. Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	B'shls.	B'shls.	Bushels.
1875-6	3,410,517	37,177	1,006,486	...	1,200	...	...	4,455,380
1880-1	4,518,897	49,299	1,409,607	...	896	...	...	5,978,699
1885-6	4,386,163	181,240	1,574,294	...	1,417	...	...	6,093,114
1890-1	5,713,205	574,083	2,373,803	...	1,526	...	...	8,662,617
1895-6	5,687,030	351,891	2,391,378	...	600	...	...	8,430,899
1900-1	6,292,745	604,180	2,456,647	...	1,399	...	...	9,354,971
1905-6	5,539,750	641,216	2,164,674	...	428	...	...	8,346,068
1906-7	5,763,000	704,961	3,703,374	...	919	...	...	10,172,254
1907-8	4,527,852	508,761	3,093,789	*6,263	1,080	...	...	8,197,745
1908-9	5,216,038	650,462	2,767,600	19,043	2,136	...	...	8,655,279
1909-10	7,098,255	1,153,031	2,508,761	3,361	2,240	...	...	10,770,648
1910-11	7,594,130	982,103	4,460,306	6,375	718	449	...	13,044,081
1911-12	4,606,547	792,660	3,637,562	1,490	401	400	795	9,039,855

* Particulars for previous years not available.

4. Average Yield.—In the following table particulars are given of the average yield per acre of the maize crops of the several States for the seasons, 1901-2 and 1907-8 to 1911-12:—

AVERAGE YIELD OF MAIZE PER ACRE, 1901-2 and 1907-8 to 1911-12.

Season.	N.S.W.	Victoria.	Q'sland.	S. Aust.	W. Aust.	N. T.	F. C. Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	B'shls.	Bushels.
1901-2 ...	22.98	61.42	21.96	...	10.16	...	...	23.86
1907-8 ...	28.13	46.92	24.34	*11.41	12.41	...	...	27.16
1908-9 ...	28.85	46.45	21.68	15.57	11.80	...	...	26.72
1909-10 ...	33.36	60.59	18.96	16.00	14.64	...	...	29.54
1910-11 ...	35.62	48.74	24.66	10.30	15.61	23.63	...	31.44
1911-12 ...	27.47	43.50	23.63	15.36	13.83	21.05	11.52	26.58
Average for 10 Seasons	28.71	55.20	21.13	†13.54	13.44	...	...	26.84

Particulars for previous years not available.

† Average for 5 seasons.

The extraordinarily high average yield obtained in Victoria is due, in large measure, to the fact that the area under maize in that State is comparatively small and is situated in districts that are peculiarly suited to the production of this grain. The yield in New South Wales is appreciably higher than that obtained in Queensland.

5. Value of Maize Crop.—The value of the Commonwealth maize crop for the season 1911-12 has been estimated at £1,637,692, made up as follows:—

VALUE OF MAIZE CROP, 1911-12.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	N. T.	Federal Capital Terr.	C'wealth.
	£	£	£	£	£	£	£	£
Aggregate value	1,013,971	168,440	454,695	242	85	80	179	1,637,692
Value per acre	£6/0/11	£9/4/10	£2/19/1	£2/9/11	£2/18/7	£4/4/3	£2/11/11	£4/16/4

6. **Relation to Population.**—During the past ten seasons the Commonwealth production of maize has ranged between $1\frac{1}{2}$ bushels per head of population in 1902-3 and 3 bushels per head in 1910-11. The production in Queensland, the State in which the maize yield per head of population is highest, ranged during the same period between 2 bushels per head in 1902-3 and $7\frac{1}{2}$ bushels per head in 1910-11. Details for the several States for the seasons 1901-2 and 1907-8 to 1911-12 are as follows:—

MAIZE PRODUCTION PER 1000 OF POPULATION, 1901-2 and 1907-8 to 1911-12.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	N. T.	Federal Capital Terr.	Commonwealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	2,795	509	5,070	...	27	...	...	1,839
1907-8	2,976	418	5,668	†17	4	...	...	1,955
1908-9	3,340	520	4,968	49	8	...	...	2,045
1909-10	4,398	907	4,342	9	8	...	...	2,491
1910-11	4,620	755	7,446	16	3	132	...	2,948
1911-12	2,786	596	5,921	4	1	121	447	2,018

† Particulars for previous years not available.

7. **Australian and Foreign Maize Production.**—The following table gives the production of maize in Australia and in the leading maize producing countries of the world. The figures show that of the total production the United States of America was responsible for 75 per cent.

PRODUCTION OF MAIZE IN VARIOUS COUNTRIES, 1910.

Country.	Production of Maize.	Country.	Production of Maize.
	Bushels.		Bushels.
United States ...	3,030,691,320	Servia ...	30,799,064
Hungary ...	199,046,208	Bulgaria ...	26,462,432
Mexico ...	184,870,296	Spain ...	25,534,528
Argentine Republic ...	163,463,336	Canada* ...	18,726,000
Rumania ...	100,461,424	Austria ...	16,215,600
Italy ...	94,914,528	Australia ...	13,044,081
Russian Empire ...	72,207,000	Uruguay ...	6,377,400
Egypt ...	65,589,536		

* Exclusive of British Columbia.

8. **Comparison of Yields.**—The average yield per acre of maize in the Commonwealth of nearly $31\frac{1}{2}$ bushels may be regarded as highly satisfactory when compared with that of other maize producing countries. Canada and Egypt are the only countries shewing a higher average. The majority of the remaining twelve countries shown on the following table had average yields per acre ranging from 20 to $28\frac{1}{2}$ bushels, while others were as low as $11\frac{1}{2}$ and 14.

AVERAGE YIELD OF MAIZE IN VARIOUS COUNTRIES, 1910.

Country.	Average yield per acre.	Country.	Average yield per acre.
	Bushels.		Bushels.
Canada ...	57.00	Servia ...	21.31
Egypt ...	34.26	Austria ...	21.21
Australia ...	31.44	Rumania ...	20.48
Hungary ...	28.47	Russia ...	19.73
United States of America ...	26.58	Bulgaria ...	17.52
Italy ...	23.71	Mexico ...	13.83
Spain ...	22.77	Uruguay ...	11.42
Argentine Republic ...	22.02		

9. Oversea Imports and Exports.—Except in the years 1902 and 1903, when, owing to the severe drought experienced in Australia, many of the maize crops failed, the Commonwealth overseas trade in maize has been practically insignificant. In the former of the years mentioned nearly two million, and in the latter considerably more than a million bushels were imported. In 1908 and 1909 also, owing to the small harvests of seasons 1907-8 and 1908-9, the imports of maize were largely in excess of the exports. Details of imports and exports for the past ten years are as follows:—

COMMONWEALTH IMPORTS AND EXPORTS OF MAIZE, 1901 and 1907 to 1911.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value
	Bushels.	£	Bushels.	£	Bushels.	£
1901 ...	183,423	24,764	533	75	187,890	24,689
1907 ...	31,327	5,541	43,429	6,220	12,102	679
1908 ...	271,723	49,291	2,018	444	269,705	48,847
1909 ...	628,063	104,367	5,054	999	623,009	103,368
1910 ...	133,730	19,554	12,557	1,904	121,173	17,650
1911 ...	31,764	4,925	19,914	3,438	11,850	1,487

Note. — signifies net imports.

The principal countries to which maize has been exported from the Commonwealth are South Africa, New Zealand, and China, while the principal countries from which importations have taken place are the Argentine Republic, New Zealand, the United States, the Pacific Islands, South Africa, and Java.

10. Prepared Maize.—A fairly large quantity of corn-flour is imported annually into the Commonwealth, the principal countries of supply being the United Kingdom and the United States. During the year 1911 these importations amounted to 449,744 lbs., and represented a value of £7142.

11. Price of Maize.—The average wholesale price of maize in the Sydney market is given in the following table for each of the years 1902 to 1911:—

AVERAGE PRICE OF MAIZE PER BUSHEL, 1902 to 1911.

Particulars.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Average price per bushel...	4 10	4 1	2 4	3 3	3 0	3 2	4 7	4 2	2 11	3 0

§ 7. Barley.

1. Area under Barley.—The area devoted to barley in the Commonwealth is one which has fluctuated very considerably, but the net result of these fluctuations has left it in practically the same position as that which it occupied thirty years ago. The principal barley-growing State is Victoria, which, for the season 1911-12, accounted for 46 per cent. of the Commonwealth area devoted to this crop; South Australia was next in importance with a percentage of 35 per cent.; the remaining 19 per cent. being represented by New South Wales, Tasmania, Western Australia and Queensland in the order named. The figures here given relate to the areas harvested for grain; only small areas are cropped for hay, while more considerable quantities are cut for green forage. These, however, are not included in this sub-section. The area under barley for grain in the several States from 1875 onwards is shewn in the following table:—

COMMONWEALTH AREA UNDER BARLEY, 1875-6 to 1911-12.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres
1875-6	4,817	31,568	613	13,969	5,014	5,939	61,920
1880-1	8,056	68,630	1,499	13,074	6,363	8,297	105,919
1885-6	5,298	74,112	406	16,493	6,178	6,833	109,320
1890-1	4,937	87,751	584	14,472	5,322	4,376	117,442
1895-6	7,590	78,438	721	14,184	1,982	6,178	109,043
1900-1	9,435	58,853	7,533	15,352	2,586	4,502	98,211
1905-6	9,519	40,938	5,201	26,250	3,665	5,372	90,945
1906-7	7,979	52,816	8,601	28,122	3,590	5,328	106,436
1907-8	11,890	63,074	6,943	37,321	6,019	5,852	131,099
1908-9	9,517	64,648	7,385	44,911	7,308	6,474	140,243
1909-10	15,091	58,603	13,109	41,895	8,022	6,293	143,013
1910-11	7,082	52,687	5,578	34,473	3,369	5,235	108,424
1911-12	10,803	53,541	1,634	40,743	3,664	6,081	116,466

2. **Malting and other Barley.**—In recent years the statistics of all the States have distinguished between "malting" and "other" barley. Particulars for the Commonwealth are as follows:—

AREA UNDER MALTING AND OTHER BARLEY, 1911-12.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Malting barley	8,037	36,748	1,216	28,419	1,227	5,212	80,859
Other barley...	2,766	16,793	418	12,324	2,437	869	35,607
Total ...	10,803	53,541	1,634	40,743	3,664	6,081	116,466

It will be seen that, taking the Commonwealth as a whole, about 69 per cent. of the area devoted to this grain in 1911-12 was cropped with malting barley. The proportion varies considerably in the several States.

3. **Total Yield.**—The total production of barley in the Commonwealth for the season 1911-12 amounted to 2,056,836 bushels, falling short of the yield of the previous season by 169,532 bushels. Particulars concerning the yields of the several States from 1875 onwards are as follows:—

COMMONWEALTH BARLEY CROP, 1875-6 to 1911-12.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1875-6	98,576	700,665	12,260	197,315	70,196	165,357	1,244,369
1880-1	163,395	1,068,830	31,433	151,886	89,082	169,156	1,673,732
1885-6	85,606	1,302,854	9,826	218,334	89,581	176,466	1,882,667
1890-1	81,383	1,571,599	12,673	175,583	85,451	99,842	2,026,531
1895-6	96,119	715,592	7,756	140,391	18,691	138,833	1,117,382
1900-1	114,228	1,215,478	127,144	211,102	29,189	116,911	1,814,052
1905-6	111,266	1,062,139	61,816	505,916	49,497	106,042	1,896,676
1906-7	152,739	1,255,442	158,283	491,246	48,827	141,895	2,248,432
1907-8	75,148	1,059,295	64,881	566,937	76,205	149,186	1,991,652
1908-9	166,538	1,511,181	137,667	825,740	74,433	158,645	2,874,204
1909-10	272,663	1,023,384	193,586	691,424	101,673	153,654	2,436,384
1910-11	82,005	1,340,387	83,621	544,471	33,566	142,318	2,226,368
1911-12	129,008	1,024,584	15,369	702,855	37,011	148,009	2,056,836

4. Value of Barley Crop.—The estimated value of the total barley crop of the Commonwealth for the season 1910-11 was £400,054, while that for 1911-12 was £483,151, the lesser yield for the latter season being more than compensated for by the higher prices ruling. The extent to which the several States have contributed to the total is shewn in the following table:—

VALUE OF BARLEY CROP,* 1911-12.

Particulars.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	C'wealth.
Total value ...	£31,390	£281,854	£1,665	£126,829	£6,126	£85,287	£483,151
Value per acre	£2/18/1	£5/5/3	£1/0/5	£3/2/3	£1/13/11	£5/16/1	£4/3/0

* Exclusive of the value of straw.

5. Relation to Population.—During the past ten seasons the quantity of barley produced in the Commonwealth has averaged about half a bushel per head of population. For the season 1911-12 the production ranged from about 1½ bushels per head in South Australia to one-fortieth of a bushel in Queensland. Details for the period are as follows:—

BARLEY PRODUCTION PER 1000 OF POPULATION, 1901-2 and 1907-8 to 1911-12.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ...	75	573	547	677	179	956	397
1907-8 ...	49	859	119	1,517	299	787	479
1908-9 ...	107	1,209	247	2,140	287	827	679
1909-10 ...	169	801	335	1,760	383	796	563
1910-11 ...	50	1,002	140	1,338	121	734	503
1911-12 ...	78	771	25	1,709	129	778	458

6. Commonwealth Imports and Exports.—The Commonwealth oversea trade in barley is not extensive, and in most years the imports exceed the exports. In 1902 and 1903 somewhat extensive importations of barley from the United States and New Zealand took place, owing to the shortage in local supply resulting from the severe drought of that period. In 1904, the excellent crop of the season 1903-4 furnished the material for a heavy exportation to Japan, the total exported thither during that year being 551,821 bushels. In 1909 also a fairly heavy export took place, mainly to the United Kingdom. Particulars of the Commonwealth oversea imports and exports of barley for the years 1901 and 1907 to 1911 are contained in the following table:—

COMMONWEALTH IMPORTS AND EXPORTS OF BARLEY, 1901 and 1907 to 1911.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901 ...	55,508	7,208	17,474	1,942	— 38,034	— 5,266
1907 ...	232,154	53,802	38,350	5,533	—193,804	— 48,269
1908 ...	452,462	107,126	1,148	290	—451,314	—106,836
1909 ...	51,332	12,356	188,946	28,774	137,614	16,418
1910 ...	34,684	8,498	39,146	5,155	4,462	— 3,343
1911 ...	213,316	58,922	9,420	1,256	—208,896	— 57,666

Note. — signifies net imports.

Only in three years during the period embraced in the above table have the Commonwealth exports of barley exceeded the imports in value, viz., in 1904, 1905, and 1909. During the last ten years the total importations amounted to 2,989,264 bushels, valued at

£594,047, and the total exports to 1,115,809 bushels, valued at £143,164, giving a net importation of 1,873,455 bushels in quantity and £450,883 in value.

In addition to the above, which relates to the unprepared grain, there is a small importation into the Commonwealth of pearl and Scotch barley, mainly from the United Kingdom, Germany, China and Japan. The total imported during 1911 amounted to only 14,567 lbs. in weight, with a value of £123.

From time to time a considerable export trade in Australian pearl and Scotch barley has been carried on, mainly with the United Kingdom and New Zealand, the total exports for 1909 reaching 1,155,346 lbs. valued at £3573, and for 1910, 119,337 lbs. valued at £510. During 1911, however, the exports were only 588 lbs., valued at £8.

7. Commonwealth Imports and Exports of Malt.—The importations of malt into the Commonwealth are fairly extensive, the bulk of the supply being obtained from the United Kingdom, Austria-Hungary, and Germany, but principally from the United Kingdom. Details of imports and exports for the years 1901 and 1907 to 1911 are given hereunder:—

COMMONWEALTH IMPORTS AND EXPORTS OF MALT, 1901 and 1907 to 1911.

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels	£
1901	516,135	140,615	...	...	516,135	140,615
1907	153,415	48,262	1,087	371	152,328	47,891
1908	210,860	67,219	528	199	210,332	67,020
1909	110,563	35,239	470	174	110,093	35,065
1910	108,168	34,696	258	66	107,910	34,630
1911	102,760	32,798	88	32	102,672	32,766

8. Comparison with other Countries.—In comparison with the barley production of other countries of the world, that of Australia appears very small indeed. Particulars for some of the leading countries for the year 1910 are as follows, the Australian figures being added for the sake of comparison:—

PRODUCTION OF BARLEY IN VARIOUS COUNTRIES, 1910.

Country.	Production of Barley.	Country.	Production of Barley.
	Bushels.		Bushels.
Russian Empire ...	439,255,440	Canada* ...	45,147,600
United States ...	157,295,296	France ...	42,133,576
Germany ...	127,961,504	Rumania ...	28,451,312
Spain ...	73,236,024	Sweden ...	14,306,328
United Kingdom ...	63,044,496	Netherlands ...	3,008,048
Austria ...	62,925,200	Australia ...	2,226,368
Hungary ...	53,895,088	New Zealand ...	927,112
Japan ...	46,085,256		

Exclusive of British Columbia.

9. Average Yield.—The average yield per acre of barley varies considerably in the different States, being as a rule highest in Tasmania and Victoria, and lowest in Western

Australia and New South Wales. Details for each State for the seasons 1901-2 and 1907-8 to 1911-12 are given in the following table :—

AVERAGE YIELD PER ACRE OF BARLEY, 1901-2 and 1907-8 to 1911-12.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West Aust.	Tas.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ...	17.16	21.40	23.53	15.68	13.01	27.44	20.40
1907-8 ...	6.32	16.79	9.34	15.19	12.66	25.49	15.19
1908-9 ...	7.50	23.38	18.64	18.39	10.19	24.50	20.49
1909-10 ...	18.07	17.46	14.77	16.50	12.67	24.42	17.04
1910-11 ...	11.58	25.44	14.99	15.79	9.96	27.19	20.53
1911-12 ...	11.94	19.14	9.41	17.25	10.10	24.34	17.66
Average for 10 Seasons ...	14.30	21.19	17.51	16.72	12.06	24.39	18.83

10. **Price of Barley.**—The average prices of barley in the Melbourne market during each of the years 1903 to 1911 are given in the following table :—

AVERAGE PRICE OF BARLEY PER BUSHEL, 1903 to 1911.

Particulars.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Malting barley	3 11	3 6	4 0	4 5	4 8	4 10	3 10	4 1	4 10 $\frac{1}{4}$
Cape barley ...	3 1	1 9	2 7	2 4	2 8	3 8	2 7	2 5	2 8

§ 8. Other Grain and Pulse Crops.

In addition to the grain crops already specified, the only grain and pulse crops at all extensively grown in the Commonwealth are beans, peas and rye. The total area under the two former for the season 1911-12 was 49,237 acres, giving a total yield of 310,503 bushels, or an average of 16.46 bushels per acre, being 2.62 under the average yield for the decennium ended 1911-12, which was 19.08 bushels per acre. The States in which the greatest area is devoted to beans and peas are Tasmania, Victoria and South Australia. The total area under rye in the Commonwealth during the season 1911-12 was 5,787 acres, yielding 57,984 bushels, and giving an average of 10.02, this being below the average for the past ten seasons, which is 12.51 bushels per acre. Nearly 44 per cent. of the rye grown during the season was produced in New South Wales, 21 per cent. in Tasmania, and 17 per cent. in Victoria. In addition to these grain crops a small area of rice was for some years cultivated in Queensland. The results obtained, however, have not offered sufficient inducement to growers to continue this crop, and the total area devoted to it declined from 1113 acres in 1892-3 to 15 acres in 1911-12. Twelve acres were under cultivation during 1910-11 in the Northern Territory, producing 784 bushels of rice, and 2 acres in 1911-12 yielding 75 bushels. Should rice-growing ever be seriously taken up in Australia, it is probable that large tracts of country in the northern parts of Western Australia and in the Northern Territory will be found well suited to its cultivation.

§ 9. Potatoes.

1. **Area.**—The principal potato-growing State of the Commonwealth as regards area is Victoria, Tasmania prior to 1909-10 usually ranking second and New South Wales third: the relative positions of these two States have, however, been reversed during the last three seasons. The lower figures for Tasmania relating to 1909-10 and onwards may mainly be attributed to the prevalence of the Irish potato blight in that State; New South Wales, on the other hand, has increased her acreage under this crop from 26,301 acres in 1908-9 to 43,079 in 1911-12. The area devoted to this crop in the Commonwealth, which has fluctuated somewhat, reached its highest point in the season 1910-11, with a total of 151,515 acres.

The area under potatoes in each State from 1890 onwards is given hereunder :—

COMMONWEALTH AREA UNDER POTATOES, 1890-1 to 1911-12.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	F. C. Terr.	C'wealth.
	Acrea.	Acrea.	Acrea.	Acrea.	Acrea.	Acrea.	Acrea.	Acrea.
1890-1 ...	19,406	53,818	6,270	6,626	511	20,133	...	106,764
1895-6 ...	24,722	43,895	9,240	6,448	668	19,247	...	104,220
1900-1 ...	29,408	38,477	11,060	6,628	1,794	23,068	...	110,435
1905-6 ...	26,374	44,670	7,170	9,540	2,145	28,634	...	118,533
1906-7 ...	36,815	55,372	8,031	9,894	2,264	34,305	...	146,681
1907-8 ...	31,917	54,149	7,889	9,062	1,854	38,640	...	143,511
1908-9 ...	26,301	47,903	6,227	8,069	2,026	35,159	...	125,685
1909-10 ...	35,725	62,390	7,708	8,131	1,741	21,375	...	137,070
1910-11 ...	44,452	62,904	8,326	7,812	1,791	26,230	...	151,515
1911-12 ...	43,079	47,692	7,688	7,412	2,705	21,818	69	130,463

2. **Total Yield.**—For the season 1911-12, Victoria's production represented about 39½ per cent. of the total for the Commonwealth, New South Wales and Tasmania coming next in order with 25 and 20½ per cent. respectively. The total Commonwealth production for the season 1906-7, viz., 507,153 tons, was the highest ever attained, the yield which most nearly approached it being 449,383 tons in 1903-4. Details as to production in the several States during the period from 1890 onwards are as follows :—

COMMONWEALTH PRODUCTION OF POTATOES, 1890-1 to 1911-12.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	F. C. Terr.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1890-1 ...	52,791	204,155	13,112	23,963	1,900	73,158	...	369,079
1895-6 ...	56,179	117,238	19,027	18,412	2,290	81,423	...	294,569
1900-1 ...	63,253	123,126	20,014	14,566	4,836	93,862	...	319,657
1907-8 ...	55,882	135,110	13,177	20,263	5,671	145,483	...	375,586
1908-9 ...	71,794	152,840	11,550	21,553	6,695	121,605	...	386,037
1909-10 ...	100,143	174,970	13,544	18,569	5,948	73,862	...	387,036
1910-11 ...	121,033	163,312	15,632	23,920	5,864	70,090	...	399,851
1911-12 ...	75,040	119,092	13,087	22,668	9,312	62,164	126	301,489

3. **Average Yield per Acre.**—The suitability of the soil, climate, and general conditions of Tasmania for potato growing is evidenced by the high yields per acre which are almost invariably obtained in the island State, the average yield during the past ten seasons being nearly 4 tons per acre. The lowest average yield is that obtained in Queensland

with an average of a little under two tons for the same period. Particulars for each State for the seasons 1901-2 and 1907-8 to 1911-12 are given hereunder :—

AVERAGE YIELD OF POTATOES, 1901-2 and 1907-8 to 1911-12.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fd. Cp. Terr.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	1.50	3.13	2.25	2.41	3.14	4.51	...	2.94
1907-8	1.75	2.50	1.67	2.24	3.06	3.77	...	2.62
1908-9	2.73	3.19	1.85	2.67	3.30	3.46	...	3.07
1909-10	2.80	2.80	1.76	2.28	3.42	3.46	...	2.82
1910-11	2.72	2.60	1.88	3.06	3.27	2.67	...	2.64
1911-12	1.74	2.50	1.70	3.06	3.44	2.85	1.83	2.31
Average for 10 Seasons	2.35	2.80	1.85	2.70	3.02	3.94	...	2.90

4. **Value of Potato Crop.**—The estimated value of the potato crop of each State for the season 1911-12 is furnished in the following table, together with the value per acre :—

VALUE OF POTATO CROP, 1911-12.

Particulars.	N.S.W.	Victoria.	Q'land	S. Aust.	W. Aust.	Tas.	Fed. Cap. Territory.	C'wealth.
Tot. value	£574,415	£821,735	£91,609	£147,342	£116,866	£543,935	£895	£2,296,797
Value per acre ...	£13/6/8	£17/4/7	£11/18/4	£19/17/7	£43/4/1	£24/18/7	£12/19/5	£17/12/1

5. **Relation to Population.**—The average production of potatoes per annum per head of the population of the Commonwealth for the past ten seasons has been approximately 204 lbs. In Tasmania, where this crop is of far greater importance in relation to population than is the case in any other State, the production per head in 1906-7 was nearly a ton, and in 1911-12 about 6½ cwt. Details for the seasons 1901-2 and 1907-8 to 1911-12 are as follows :—

POTATO PRODUCTION PER 1000 POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	Fd. Cp. Terr.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	28	104	44	42	30	655	...	84
1907-8	37	110	24	54	22	767	...	90
1908-9	46	122	21	56	26	634	...	91
1909-10	62	137	23	47	22	382	...	90
1910-11	93	125	26	59	21	362	...	90
1911-12	45	90	21	55	32	327	69	67

6. **Commonwealth Imports and Exports.**—Under normal conditions there is usually a fairly large export trade in potatoes carried on by the Commonwealth, principally with New Zealand, the Pacific Islands, and the Philippine Islands. Thus, during 1907, out of a total export of 17,842 tons, 13,346 tons went to New Zealand, 2102 tons to the Pacific

Islands, and 2112 tons to the Philippine Islands. On the other hand, when in 1902 and 1903 the drought of that period had brought about a shortage in some of the States, importations from New Zealand took place to the extent of 11,471 tons in the former and 2279 tons in the latter year. The quantities and values of the Commonwealth over-sea imports and exports of potatoes for the years 1901 and 1907 to 1911 are contained in the following table:—

COMMONWEALTH IMPORTS AND EXPORTS OF POTATOES, 1901 and 1907 to 1911

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1901 ...	17,655	86,067	6,028	45,485	11,627	40,582
1907 ...	150	981	17,842	53,452	17,692	52,471
1908 ...	129	1,112	3,375	18,560	3,246	17,448
1909 ...	138	1,202	2,604	16,370	2,466	15,168
1910 ...	1,665	1,313	7,089	42,395	5,424	41,082
1911 ...	245	1,831	1,834	12,241	1,589	10,360

Note. — signifies net imports.

7. Comparison with Other Countries.—The following table will furnish means for comparing the potato crop of Australia for 1910 with those of some of the leading potato-producing countries of the world for the same year:—

POTATO CROPS OF VARIOUS COUNTRIES, 1910.

Country.	Yield.	Country.	Yield.
	Tons.		Tons.
Germany ...	42,769,796	Canada *...	1,851,200
Russian Empire ...	35,602,168	Sweden ...	1,661,784
Austria ...	13,151,586	Italy ...	1,514,325
France ...	8,271,455	Denmark ...	734,338
United States ...	8,212,779	Japan (1909) ...	589,376
United Kingdom ...	6,947,966	Norway ...	542,637
Hungary (1909) ...	5,365,376	Australia ...	399,851
Belgium (1909) ...	2,419,648	New Zealand ...	141,510
Netherlands (1909) ...	2,357,000	Luxemburg ...	136,170

* Exclusive of British Columbia.

§ 10. Other Root and Tuber Crops.

1. Nature and Extent.—Root crops, other than potatoes, are not extensively grown in Australia, the total area devoted to them for the season 1911-12 being only 16,001 acres. The principal of these crops are onions, mangolds, turnips, and "sweet potatoes" (*Batatas edulis*). Of these, onions are most largely grown in Victoria, mangolds in Tasmania and Victoria, turnips in Tasmania, and sweet potatoes in Queensland. The total area under onions in the Commonwealth during the season 1911-12 was 4182 acres giving a total yield of 23,701 tons, and averaging 5.67 tons per acre. The area devoted in 1911-12 to root crops other than potatoes and onions, viz., 11,819 acres, yielded 99,078 tons, and gave an average of 8.38 tons per acre. The areas and yields here given are exclusive of the production of "market gardens," a reference to which will be made later.

2. Commonwealth Imports and Exports.—The only root crop, other than potatoes, in which any considerable overseas trade is carried on by the Commonwealth is that of onions. During the year 1911 overseas imports of onions amounted to 71 tons, obtained principally from the Straits Settlements, of which total 62 tons went to Western Australia. For the same year the exports of onions totalled 646 tons, the principal countries to which they were exported being New Zealand, the Philippine Islands, Canada, and the South African Union.

1908, 084	270, 224	187, 088	222, 004	220, 208	...	...	...	...	...
201, 041	...	...	...	...	...	...	...	...	...
...
...

S. H. Hay.

1. Nature and Extent.—As already stated, the most important crop of the Commonwealth is that of wheat grown for grain. Next to this in importance is the hay crop, which for the season 1911-12 represented nearly 21 per cent. of the area under crop in the Commonwealth. In most European countries the hay crop consists almost entirely of meadow and other grasses, whilst in Australia a very large proportion of the area under hay comprises cereal crops, mainly wheat and oats. A considerable quantity of lucerne hay is also made, particularly in New South Wales and Queensland. The area under hay of all kinds in the several States from 1860 onwards is given hereunder:—

AREA UNDER HAY, 1860-1 to 1911-12.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	N. T.	F. C. Terr.	C'wealth.
1860-1	Acres. 46,584	Acres. 90,921	Acres. 276	Acres. 55,818	Acres. 6,626	Acres. 31,837	...	...	232,062
1865-6	61,909	97,902	1,449	101,996	8,824	30,244	...	...	302,324
1870-1	65,404	163,181	3,671	140,316	17,173	33,612	...	...	423,357
1875-6	77,125	155,274	8,531	161,429	17,319	34,758	...	...	454,436
1880-1	131,153	249,656	12,022	272,567	19,563	31,615	...	...	716,576
1885-6	219,886	421,036	28,881	312,672	19,677	41,693	...	...	1,043,945
1890-1	175,242	413,052	31,106	345,150	23,183	45,381	...	...	1,033,114
1895-6	319,296	464,482	28,609	362,972	63,804	54,748	...	...	1,293,911
1900-1	466,236	502,105	42,497	341,330	104,254	61,541	...	...	1,517,963
1905-6	438,036	591,771	37,425	317,924	124,906	64,350	...	...	1,574,412
1906-7	458,172	621,139	64,498	298,396	149,830	64,965	...	...	1,657,000
1907-8	542,761	682,194	54,037	328,672	131,056	73,859	...	...	1,812,579
1908-9	715,896	956,871	65,004	424,924	201,874	88,613	...	...	2,452,632
1909-10	630,491	864,859	72,298	424,448	158,629	77,804	...	...	2,228,029
1910-11	638,577	832,669	98,558	440,177	175,432	72,992	...	...	2,258,405
1911-12	651,866	860,205	61,299	521,182	344,032	77,466	18	2,220	2,518,288

It will be seen from this table that in all the States marked fluctuations occur in the area devoted to the hay crop from year to year. These fluctuations are due to various causes, the principal being the variations in the relative prices of grain and hay, and the favourableness or otherwise of the season for a grain crop. Thus crops originally sown for grain are frequently cut for hay owing to the improved price of that commodity, or owing to the fact that the outlook for the due development of the grain is not a satisfactory one. On the other hand, improved grain prices or the prospect of a heavy yield will frequently cause crops originally intended for hay to be left for grain. The area under hay in the Commonwealth for the season 1911-12 was the highest on record.

2. Kinds of Hay.—Particulars concerning the kind of crop cut for hay are furnished in the returns prepared by five of the States; no information is available in the case of Tasmania.

Details for the past five seasons are given in the following table:—

KINDS OF HAY GROWN, 1907-8 to 1911-12.

Kind of Hay Crop.				1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
				Acres.	Acres.	Acres.	Acres.	Acres.
NEW SOUTH WALES—								
Wheaten	...	...	...	365,925	490,828	380,784	422,972	439,591
Oaten	...	...	...	132,325	169,441	178,968	142,805	146,162
Barley	...	...	...	937	1,566	1,917	2,241	2,309
Lucerne	...	...	...	43,574	54,061	68,822	70,559	63,804
Total	...	...	...	542,761	715,896	630,491	638,577	651,866
VICTORIA—								
Wheaten	...	...	...	210,927	278,005	186,400	240,026	304,388
Oaten	...	...	...	460,192	662,141	660,525	575,791	535,146
Other	...	...	...	11,075	16,225	17,434	16,852	20,671
Total	...	...	...	682,194	956,371	864,359	832,669	860,205
QUEENSLAND—								
Wheaten	...	...	...	2,084	4,075	9,031	19,894	1,763
Oaten	...	...	...	5,629	9,314	16,752	13,052	5,403
Lucerne	...	...	...	44,101	48,247	42,935	61,750	51,059
Other	...	...	...	2,223	3,368	3,580	3,862	3,074
Total	...	...	...	54,037	65,004	72,298	98,558	61,299
SOUTH AUSTRALIA—								
Wheaten	...	...	...	271,067	348,307	318,197	336,489	401,648
Oaten	...	...	...	48,151	68,659	96,496	96,062	113,011
Lucerne	...	...	...	3,767	3,162	2,537	2,055	2,411
Other	...	...	...	5,687	4,796	7,218	5,621	4,112
Total	...	...	...	328,672	424,924	424,448	440,177	521,182
WESTERN AUSTRALIA—								
Wheaten	...	...	...	95,123	151,745	101,590	135,521	284,073
Oaten	...	...	...	33,854	48,309	55,006	38,637	58,393
Lucerne	...	...	...	2,079	124	254	233	167
Other	...	...	...		1,696	1,779	1,041	1,399
Total	...	...	...	131,056	201,874	158,629	175,432	344,032

It will be seen that wheat is the principal hay crop in New South Wales, South Australia, and Western Australia, oats in Victoria, and lucerne in Queensland.

3. Total Yield.—The Commonwealth hay crop for the season 1911-12 amounted to 2,868,032 tons, or 9.69 per cent. less than that produced in the previous season. The 1910-11 crop, viz., 3,175,851 tons, represented the largest ever harvested in the Commonwealth, the highest previous records being that of 3,137,374 tons for the season 1908-9, and 3,153,196 for 1909-10. For many years past the State of Victoria has been the largest hay producer in the Commonwealth, and in the season 1911-12 accounted for more than 36 per cent. of the total production. The total yields of the several States from 1860 onwards are given hereunder:—

COMMONWEALTH HAY CROP, 1860-1 to 1911-12.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	N. T.	Fed. Cap. Ter.	Commonwealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1860-1	50,927	144,211	414	71,241	8,099	62,818	...	...	337,210
1865-6	54,230	96,101	2,173	88,731	7,901	34,751	...	...	283,887
1870-1	69,602	183,708	5,506	197,149	20,833	40,763	...	...	517,561
1875-6	88,968	206,613	12,796	194,794	17,319	49,217	...	...	569,707
1880-1	174,194	300,581	23,441	261,371	19,563	35,883	...	...	815,033
1885-6	191,371	442,118	30,670	307,855	19,677	51,872	...	...	1,043,563
1890-1	213,034	567,779	50,116	310,125	25,014	52,021	...	...	1,218,089
1895-6	229,671	390,861	50,881	225,462	53,758	62,345	...	...	1,012,978
1900-1	526,260	677,757	78,758	353,662	103,813	94,198	...	...	1,834,448
1905-6	459,182	864,177	56,829	435,546	139,380	90,077	...	...	2,045,191
1906-7	621,846	881,276	94,343	398,866	158,112	104,797	...	...	2,259,240
1907-8	376,800	682,370	77,601	376,170	137,511	98,406	...	...	1,748,858
1908-9	730,014	1,415,746	92,947	591,141	170,008	137,518	...	...	3,137,374
1909-10	981,201	1,186,738	96,854	574,475	195,182	118,746	...	...	3,153,196
1910-11	843,044	1,292,410	151,252	595,064	178,891	115,190	...	...	3,175,851
1911-12	726,933	1,032,288	94,553	605,239	299,695	107,684	40	1,600	2,868,032

4. **Value of Hay Crop.**—The following table furnishes particulars concerning the total value and the value per acre of the hay crop of the several States of the Commonwealth for the season 1911-12:—

VALUE OF HAY CROP, 1911-12.

Particulars.	New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.	N. T.	Fed. Cap. Ter.	Commonwealth.
Total value ...	£2,670,502	£3,716,237	£365,777	£2,118,337	£1,035,015	£376,894	£50	£6,148	£10,288,960
Value per acre	£3/13/6	£3/12/0	£3/17/4	£3/10/0	£3/9/1	£3/10/0	£1/5/0	£3/16/10	£3/11/9

5. **Average Yield per Acre.**—The States of the Commonwealth in which the highest average yields per acre have been obtained are those of Queensland and Tasmania, these being also the States in which the smallest areas are devoted to this crop. For the past ten seasons the lowest yield for the Commonwealth as a whole was that of 17 cwt. per acre in 1902-3, and the highest that of 31 cwt. in 1903-4. The average per decennium was 25 cwt. Particulars for the several States for the seasons 1901-2 and 1907-8 to 1911-12 are given hereunder:—

AVERAGE YIELD OF HAY PER ACRE, 1901-2 and 1907-8 to 1911-12.

Season.	N.S.W.	Vic.	Q'land.	S. Aus.	W.Aus.	Tas.	N. T.	F. C. Terr.	Commonwealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	1.07	1.34	1.94	0.94	0.97	1.78	...	...	1.20
1907-8	0.69	1.00	1.44	1.14	1.04	1.33	...	...	0.96
1908-9	1.02	1.48	1.43	1.89	0.84	1.55	...	...	1.28
1909-10	1.56	1.37	1.34	1.35	1.23	1.53	...	...	1.42
1910-11	1.32	1.55	1.53	1.35	1.02	1.58	...	...	1.41
1911-12	1.12	1.20	1.54	1.16	0.87	1.39	2.22	0.72	1.14
Average for 10 seasons	1.12	1.35	1.51	1.25	1.00	1.48	...	...	1.25

6. **Relation to Population.**—During the past ten seasons the Commonwealth hay production per head of population has varied between 7 cwt. in 1902-3 and $14\frac{1}{2}$ cwt. in 1903-4 and 1908-9; averaging about $11\frac{1}{2}$ cwt. per head for the period. The State in which the hay production per head of population is highest is South Australia. Details for the seasons 1901-2 and 1907-8 to 1911-12 are given hereunder:—

HAY PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	F. C. Terr.	Commonwealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	839	731	241	964	463	624	...	...	529
1907-8	248	554	142	1,007	540	519	...	...	420
1908-9	467	1,182	167	1,532	655	717	...	...	741
1909-10	608	929	168	1,462	735	615	...	...	729
1910-11	513	993	253	1,463	648	594	...	...	718
1911-12	440	777	154	1,472	1,045	566	12	899	639

7. **Oversea Imports and Exports.**—Under normal conditions hay, whether whole or in the form of chaff, is somewhat bulky for oversea trade, and consequently does not in such circumstances figure largely amongst the imports and exports of the Commonwealth. In 1901 and 1902, however, the exceptional demand which was created by the South African war brought about a fairly large export of hay and chaff to Natal and Cape Colony. These colonies also took a considerable quantity of Australian compressed fodder. During the year 1904, when the war between Japan and Russia was being carried on, the exports of compressed fodder to Hong Kong were valued at £42,759 and those to Japan at £23,608. The total value of the hay and chaff exported during 1901 was £406,455, as compared with £25,293 only in 1911, while the exports of fodder which amounted in value to £142,472 in 1904, had shrunk to £48,279 in 1911.

During 1911 the principal consignees of the hay and chaff exported from the Commonwealth were India, New Zealand, Ceylon, and the Straits Settlements, while the principal countries to which compressed fodder was exported were the Philippine Islands and New Zealand.

Imports of hay and chaff into the Commonwealth are usually unimportant, and for the year 1911 totalled 54 tons, valued at £230, obtained principally from New Zealand.

8. **Hay Production in Other Countries.**—As already noted, the hay crops of most European countries consist of grasses of various kinds, amongst which clover, lucerne, sainfoin and rye grass occupy a prominent place. The statistics of hay production in these countries are not prepared on a uniform basis, and consequently any attempt to furnish an extensive comparison of the production of hay in the various countries would probably be misleading. It may be noted, however, that in the United Kingdom the production of hay from clover, sainfoin, etc., was for the year 1911 represented by 4,186,278 tons from 3,013,988 acres, while from permanent grasses a yield of 7,470,193 tons of hay was obtained from 6,575,437 acres, giving a total of 11,656,471 tons from 9,589,425 acres, or about 24½ cwt. per acre.

§ 12. Green Forage.

1. **Nature and Extent.**—In all the States of the Commonwealth a considerable area is devoted to the production of green forage, mainly in connection with the dairying industry. The total area so cropped during the season 1911-12 was 424,440 acres, which was 49,578 acres more than the corresponding area for 1910-11. Of this total the New South Wales area represented about 50 per cent., that in Queensland 22 per cent., while that in Victoria amounted to 17½ per cent. of the total. The principal crops cut for green forage are maize, sorghum, oats, barley, rye, rape, and lucerne, while small quantities of sugar-cane also are so used. Particulars concerning the area under green forage in the several States from 1890 onwards are furnished in the following table:—

AREA UNDER GREEN FORAGE, 1890-91 to 1911-1912.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	Fd. Cp. Terr.	C'wealth.
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1890-1	37,473	10,091	9,546	7,349	161	1,497	...	...	66,117
1895-6	66,833	25,989	19,552	7,309	430	1,883	...	...	121,946
1900-1	78,144	18,975	41,445	13,136	1,024	3,749	...	...	156,473
1905-6	95,058	34,041	66,183	23,842	1,873	4,882	...	...	225,879
1906-7	122,914	36,502	50,513	17,985	3,265	5,326	...	...	236,505
1907-8	260,810	59,897	91,444	15,434	4,773	6,367	...	...	438,725
1908-9	235,539	63,066	87,675	16,086	4,902	6,243	...	...	413,511
1909-10	118,960	56,586	100,493	17,226	6,068	6,749	...	...	306,082
1910-11	179,382	71,826	89,667	20,728	4,545	8,695	19	...	374,862
1911-12	211,893	75,177	93,049	33,673	5,021	5,627	19	181	424,440

2. **Value of Green Forage Crops.**—The value of these crops is variously estimated in the several States, and the Commonwealth total for the season 1911-12 may be taken approximately as £1,217,000, or about £2 17s. 4d. per acre.

3. **Relation to Population.**—Particulars concerning the area under green forage per 1000 of the population of the Commonwealth and the several States for the seasons 1901-2 and 1907-8 to 1911-12 are given hereunder:—

AREA UNDER GREEN FORAGE PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Fed. Cap. Terr.	C'wealth.
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2	82	27	79	38	000	24	...	...	64
1907-8	171	49	168	41	10	84	...	...	105
1908-9	151	50	157	42	19	83	...	...	98
1909-10	74	44	174	44	23	35	...	...	71
1910-11	109	55	150	51	16	45	6	...	85
1911-12	128	57	151	82	18	30	6	102	95

§ 13. Sugar-Cane.

1. **Area.** Sugar-cane is grown for sugar-making purposes in only two of the States of the Commonwealth, viz., Queensland and New South Wales, and much more extensively in the former than the latter. Thus of the total area of 144,283 acres under sugar-cane in the Commonwealth for the season 1911-12 there were 130,376 acres, or about 90 per cent., in Queensland. Sugar-cane growing appears to have been started in the Commonwealth in or about 1862, as the earliest statistical record of sugar-cane as a crop is that which credits Queensland with an area of twenty acres for the season 1862-3. In the following season the New South Wales records shew that an area of two acres was devoted to the crop in the mother State. The area under cane in New South Wales reached its maximum in 1895-6 with a total of 32,927 acres. It then fell continuously to 1902-3, when it was lower than for any previous season since 1889-90. From 1902-3 to 1906-7 it remained practically stationary, but since then, with the exception of 1911-12 which was virtually the same as its predecessor, it has fallen every year and in 1910-11 had dropped to 13,763 acres, the lowest area under sugar-cane since 1882-3. In Queensland, on the other hand, although fluctuations in area are in evidence throughout, the general trend has been one of satisfactory increase, the area under cane for the season 1910-11 being the highest on record, that for 1905-6 being the next highest and that for 1906-7 only a little short of it. In 1907-8 the area in Queensland declined to 126,810 acres, and in 1908-9 still further to 123,902 acres, but there was a marked increase in 1909-10, while in 1910-11 there was a further increase when it rose to 141,779 acres. Owing to unfavourable climatic conditions the area under cane for 1911-12 shewed a falling off of 11,403 acres, or a reduction of about 8 per cent. The area under sugar-cane in the Commonwealth from 1865 is given in the following table:—

AREA UNDER SUGAR-CANE, 1865-6 to 1911-12.

Season.	N.S.W.	Queensland.	C'wealth.	Season.	N.S.W.	Queensland.	C'wealth.
	Acres.	Acres.	Acres.		Acres.	Acres.	Acres.
1865-6	141	450	591	1900-1	22,114	108,535	130,649
1870-1	4,082	6,342	10,424	1907-8	17,953	126,810	144,763
1875-6	6,454	13,459	19,913	1908-9	16,981	123,902	140,883
1880-1	10,971	20,224	31,195	1909-10	14,083	128,178	142,261
1885-6	16,419	59,186	75,605	1910-11	13,763	141,779	155,542
1890-1	20,446	50,922	71,368	1911-12	13,907	130,376	144,283
1895-6	32,927	77,247	110,174				

2. **Productive and Unproductive Cane.**—The areas given in the preceding table represent the total area on which sugar-cane was grown during the seasons specified for purposes other than green forage. The whole area, however, was not in any case cut for crushing during that season, there being always a considerable amount of "stand over" cane, as well as a small quantity required for plants. In the season 1911-12 the New South Wales total comprised 5244 acres of productive and 8663 acres of unproductive cane, while in the case of Queensland the productive cane amounted to 95,766 acres and the unproductive to 34,610 acres.

3. **Yield of Cane.**—Queensland statistics of the production of sugar-cane are not available for dates prior to the season 1897-8. In that season the total for the Commonwealth was 1,073,883 tons, as against 2,000,758 tons for 1910-11. The average yield per acre of productive cane is much higher in New South Wales than in Queensland, the average during the last decade being 22.64 tons for the former and 15.90 for the latter State. During the six seasons 1901-2 to 1906-7 in the case of New South Wales the yield remained practically constant at about 21 tons per acre. In 1907-8 the yield in New South Wales was so excellent that, notwithstanding the comparative smallness of the

area cultivated, the aggregate amount of cane produced was the largest in that State since 1898-9. In 1909-10, on the other hand, owing mainly to the decline in area of productive cane, the total yield amounted to only 131,081 tons, the lowest for the State since 1888. In 1910-11 there was a further decline in the acreage of productive cane; the yield of over 28½ tons per acre, however, was so excellent that the production exceeded that of the previous season by 29,230 tons of cane. The yield per acre for 1911-12 was approximately the same as for the previous year, but owing to the falling off in the acreage cropped, a decline to the extent of 12,512 tons was in evidence in regard to the quantity of cane produced. In Queensland the average yield per acre for 1910-11 was by far the highest recorded for that State, viz., 19.45 tons, while that for 1911-12 was 16.02, being slightly above the average in that State for the last ten years. Particulars relative to the total and average yields of the Commonwealth sugar crops for the seasons 1901-2 and 1907-8 to 1911-12 are as follows:—

YIELD OF SUGAR-CANE, 1901-2 and 1907-8 to 1911-12.

Season.	Total Yield of Cane.			Average Yield per Acre of Productive Cane.		
	N.S.W.	Queensland.	C'wealth.	N.S.W.	Queensland.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2 ...	187,711	1,180,091	1,867,802	21.36	15.10	15.73
1907-8 ...	277,390	1,665,028	1,942,418	27.97	17.64	18.62
1908-9 ...	144,760	1,433,315	1,578,075	20.83	15.54	15.91
1909-10 ...	131,081	1,168,569	1,294,650	20.23	14.53	14.95
1910-11 ...	160,311	1,840,447	2,000,758	28.65	19.45	19.96
1911-12 ...	147,799	1,534,451	1,682,250	28.18	16.02	16.65

A preliminary estimate for Queensland for the season 1911-12 states that the prospects are extremely favorable, but that the total yield of cane in that State will probably be somewhat below that of the previous season in the absence of the unusually large "stand over" which obtained in 1910-11, unless the average tonnage per acre for 1911-12 season is very much in excess of the record average yield of its predecessor.

4. **Relation to Population.**—The sugar-cane production of the Commonwealth during the past five seasons has averaged about 8 cwt. per head of population. In Queensland, the principal sugar-producing State, the production of cane per head has ranged between 2 tons in 1909-10 and 3 tons in 1907-8. Details for the period 1907-8 to 1911-12 are as follows:—

SUGAR PRODUCTION PER 1000 OF POPULATION.

State.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales ...	182	93	81	98	89
Queensland ...	3,051	2,573	2,014	3,072	2,498
Commonwealth ...	467	373	299	452	375

5. **Quality of Cane.**—The quantity of cane required to produce a ton of sugar varies considerably not only with the district in which the cane is grown but also with the season. In Queensland, for instance, during the seasons 1902-3 to 1906-7 the sugar content of the cane crushed continuously diminished, so that while in 1902-3 the quantity of cane used in producing a ton of sugar was 8.38 tons, in the season 1906-7 the quantity required was 9.38 tons, the production in the former case being approximately 12 per cent. and in the latter 10½ per cent. of the weight of cane crushed. For the season

1907-8, the cane was of much better quality, and the quantity required to produce a ton of sugar was only 8.84 tons, the sugar content representing in this case somewhat more than $11\frac{1}{2}$ per cent. of the weight of cane crushed. In 1908-9, owing in large measure to the effect of frosts, the quantity of cane required to produce one ton of sugar was increased to 9.49 tons, the sugar thus representing only about $10\frac{1}{2}$ per cent. of the weight of cane crushed, while in 1909-10 only 8.65 tons of cane were required to each ton of sugar, the sugar representing about $11\frac{1}{2}$ per cent. of the weight of cane crushed. The especially favourable weather existing throughout 1910 resulted in a very high average quantity of cane per acre being obtained, while the moisture which caused this led to a slight diminution in the saccharine density as compared with the previous year. In 1910-11 the quantity of cane required to produce one ton of sugar was 8.73 tons, the sugar produced representing about $11\frac{1}{2}$ per cent. of the weight of cane crushed; in 1911-12 the ratio of sugar to cane crushed was virtually the same, being $11\frac{1}{2}$ per cent. It should be noted also that in 1901-2 no less than 9.76 tons of cane were needed to produce a ton of sugar. It may be remarked in this connection that the systematic study of the beet in Germany shewed that by suitable culture its sugar content might be greatly increased, and this is by no means impossible in the case of sugar-cane.

6. Sugar Bounties.—The provision of bounties or similar aids to the sugar-growers of the Commonwealth early occupied the attention of the Commonwealth Parliament, the object in view being that of assisting the industry, whilst at the same time diminishing the employment of coloured labour in connection therewith. The earliest legislative provision made with this object in view was that contained in the Excise Tariff 1902, under which an excise duty of three shillings per cwt. of manufactured sugar was charged, and a rebate of four shillings per ton allowed on all sugar-cane delivered for manufacture, in the production of which white labour only had been employed after 28th February, 1902. This rebate was calculated on the basis of cane giving 10 per cent. of sugar, and was increased or reduced proportionately according to any variation from this standard, that is to say, the rebate amounted to two shillings per cwt. of the sugar content of the cane treated. In actual practice it was found that this system of rebates was producing effects that had not been anticipated at the time the legislation was passed, and that the greater part of the cost of substituting white for coloured labour in the sugar-growing industry was thereby being imposed upon the States engaged in the industry, viz., Queensland and New South Wales, instead of being a charge upon the whole Commonwealth. To remedy this state of affairs, the Sugar Rebate Abolition Act of 1903 was passed on 30th July, 1903, and the Sugar Bounty Act 1903 received assent on the same day. The rate of bounty provided by this latter Act was, as in the case of the rebate mentioned above, four shillings per ton of cane grown by white labour giving 10 per cent. of sugar, the bounty to be increased or reduced proportionately according to any variation from this standard. This Act remained in force until 31st December, 1906, when it was superseded by the provisions of the Sugar Bounty Act 1905, which extended the principle of bounties to the end of the year 1912, but stipulated that during the years 1911 and 1912 the rates payable on cane delivered should be respectively two-thirds and one-third of the rates prevailing during the earlier years of the period. During the 1910 Session of the Commonwealth Parliament an Amending Act (the Sugar Bounty Act 1910) was passed repealing the provision for successive decrements in the amount of bounty payable, and thus leaving the bounty at full rate applicable for an indefinite time. The rate of bonus allowed under this Act was six shillings per ton of cane of 10 per cent. quality grown by white labour, provided that the rates of wages and conditions of employment of such labour were fair and reasonable, in accordance with the provisions of the Act. Under the Sugar Bounty Abolition Act 1912, assented to on 24th December, 1912, the various provisions for sugar bounties were repealed, the Act to come into operation by proclamation. At the date of writing (21st January, 1913) no such proclamation had been made. Under the Excise Tariff 1905, assented to on 21st December, 1905, the excise duty on sugar was, from 1st January, 1907, increased to four shillings per cwt. of manufactured sugar in place of three shillings formerly imposed. This rate

of duty was, under the original Act, to continue in force until 31st December, 1910, reducing to 2s. 8d. per cwt. for 1911, 1s. 4d. per cwt. for 1912, and being abolished after 31st December, 1912. The Excise (Sugar) Act 1910, however, repealed these provisions for reduction and abolition, leaving the duty in force at the full rate for an indefinite time. This Act was in turn repealed by the Sugar Excise Repeal Act 1912, assented to on the 24th December, 1912, under which all provisions for collection of sugar excise duties were abolished, the Act to come into operation by proclamation. At the date of writing (21st January, 1913) no such proclamation had been made.

7. Beet Sugar.—During the past few years an effort has been made to revive the sugar-beet industry in Victoria. During 1910-11 £554 was paid as bounty on 1,847 tons of beet, and £2,244 on 7,481 tons during 1911-12. It is anticipated that the latter quantity will be increased by at least 75 per cent. during the ensuing season.

8. Cost of Bounties.—The amounts paid by the Commonwealth Government in sugar bounties and the expenses in connection therewith during the period 1907-8 to 1911-12 are shown in the following table—

SUGAR BOUNTIES AND EXPENSES, 1907-8 to 1911-12.

Particulars.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
Bounties	£ 577,148	£ 477,090	£ 402,132	£ 630,762	£ 543,503
Expenses	7,474	6,616	5,645	6,862	*
Total	584,622	483,706	407,777	637,624	*

* Not available.

9. Collection of Sugar Excise.—The table hereunder contains particulars concerning the net amount of excise duty on sugar collected in respect of the several States for the years 1901-2 and 1907-8 to 1911-12. In this table refunds and drawbacks have been deducted and the requisite adjustment has been made between the States:—

SUGAR EXCISE, 1901-2 and 1907-8 to 1911-12.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1901-2	119,577	40,189	10,658	781	8,184	10,156	189,545
1907-8	266,876	226,638	103,272	63,788	46,238	35,116	741,928
1908-9	250,329	229,409	116,215	69,267	49,434	36,122	750,776
1909-10	137,672	229,981	126,626	9,373	32,526	12,538	548,716
1910-11	*	*	*	*	*	*	794,645
1911-12	*	*	*	*	*	*	748,670

* Amounts not allocated to separate States.

10. Production by White and Coloured Labour.—The following table contains particulars furnished by the Commonwealth Treasury concerning the production of sugar in New South Wales and Queensland during the past ten seasons, and furnishes an indication of the decline in the employment of coloured labour in the sugar industry during that period:—

SUGAR PRODUCTION, 1902-3 to 1911-12.

Season.	New South Wales.			Queensland.			Commonwealth.		
	Sugar Produced by—			Sugar Produced by—			Sugar Produced by—		
	White Labour.	Coloured Labour.	Total.	White Labour.	Coloured Labour.	Total.	White Labour.	Coloured Labour.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1902-3 ...	19,434	1,526	20,960	12,254	65,581	77,835	31,688	67,107	98,795
1903-4 ...	19,236	2,561	21,797	24,406	65,456	89,862	43,642	68,017	111,659
1904-5 ...	17,812	1,838	19,650	39,404	105,616	145,020	57,216	107,454	164,670
1905-6 ...	18,019	1,964	19,983	50,897	101,362	152,259	68,916	103,325	172,242
1906-7 ...	21,805	1,613	23,418	127,539	54,619	182,158	149,344	56,232	205,576
1907-8 ...	28,247	934	29,181	162,480	22,583	185,063	190,727	23,517	214,244
1908-9 ...	14,351	964	15,315	132,049	18,358	150,407	146,400	19,322	165,722
1909-10 ...	13,839	815	14,654	118,298	14,451	132,749	132,137	15,266	147,403
1910-11 ...	17,936	892	18,828	191,406	15,776	207,182	209,342	16,668	226,010
1911-12 ...	16,412	887	17,299	160,091	10,371	170,462	176,503	11,258	187,761

During the period under review the proportion of sugar produced by coloured labour declined from 68 per cent. of the total for 1902-3 to less than 6 per cent. of the total for 1911-12.

11. **Imports and Exports of Sugar.**—Notwithstanding the increase in the production of sugar in evidence in the Commonwealth during recent years, Australia's overseas import trade in cane sugar remained fairly extensive until 1906, the principal countries engaged in supplying this commodity being Java, Mauritius, and Fiji. In 1907 the exports of sugar exceeded the imports for the first time, the value of the net exports being £166,121. In 1908 the imports exceeded the exports by 96,218 cwt. in quantity and £37,080 in value; while in the following year the excess of imports over exports was 1,832,943 cwt., value £1,004,308. In 1910 and 1911 the net imports fell in quantity to 548,474 cwt. and 518,889 cwt. respectively, the corresponding values being £297,958 and £273,518. The principal countries to which Australian sugar is exported are South African Union, the Pacific Islands, the United Kingdom, and Portuguese East Africa, but the bulk of the sugar exported from the Commonwealth is not of Australian origin, but merely a re-export of sugar produced elsewhere. Thus of 146,623 cwt. exported during 1911, only 15,582 cwt. were of Australian origin. The sugar so re-exported comes mainly from Fiji, Java, and Mauritius. Particulars concerning the imports and exports of cane sugar for 1901 and the past five years are as follows:—

IMPORTS AND EXPORTS OF CANE SUGAR, 1901 and 1907 to 1911.

Year.	Overseas Imports.		Overseas Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	cwt.	£	cwt.	£	cwt.	£
1901 ...	1,970,883	1,239,550	94,764	63,876	1,876,119	1,170,674
1907 ...	123,351	77,259	365,213	243,380	— 241,862	— 166,121
1908 ...	391,048	245,495	294,890	208,415	96,218	37,080
1909 ...	1,993,967	1,122,863	161,024	118,555	1,832,943	1,004,308
1910 ...	680,166	406,709	131,687	108,751	548,479	297,958
1911 ...	665,512	404,474	146,623	120,956	518,889	273,518

Note. — signifies net exports.

§ 14. Vineyards.

1. **Nature and Extent.**—The introduction of the vine into Australia has been set down by different investigators as at various dates, the years 1815 and 1828 being principally favoured. It would seem, however, that the vine was really brought out with the First Fleet, which initiated the colonisation of Australia, in 1788, and that consequently the Australian vine is as old as Australian settlement. As already mentioned a report of Governor Hunter's gives the area under vines in 1797 as 8 acres. From New South Wales the vine spread to Victoria and South Australia, and these States have now far outstripped the mother State in the area which they have devoted to its cultivation. In Queensland and Western Australia also, vine-growing has been carried on for many years, but in neither State has the industry progressed with the rapidity attained in Victoria and South Australia. In Tasmania the climate is not favourable to the growth of grapes. The purposes for which grapes are grown in Australia are three in number, viz.—(i.) for wine-making, (ii.) for table use, (iii.) for drying. The total area under vines in the several States from 1860 onwards is given in the following table:—

COMMONWEALTH VINEYARDS, 1860-1 to 1911-12.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.		Acres.
1860-1	1,584	1,188	—	3,180	335	There are no vineyards in Tasmania.	6,237
1865-6	2,126	4,078	110	6,629	634		13,577
1870-1	4,504	5,466	416	6,131	710		17,227
1875-6	4,459	5,081	376	4,972	675		15,563
1880-1	4,800	4,980	739	4,337	659		15,515
1885-6	5,247	9,775	1,483	5,142	624		22,271
1890-1	8,044	20,686	1,981	9,535	1,024		41,270
1895-6	7,519	30,275	2,021	17,604	2,217		59,636
1900-1	8,441	30,634	2,019	20,158	3,325		64,577
1905-6	8,754	26,402	2,044	23,603	3,541		64,344
1906-7	8,521	25,855	2,070	22,586	3,525		62,557
1907-8	8,483	26,465	1,973	21,080	3,231		61,232
1908-9	8,251	24,430	1,616	22,031	3,122		59,450
1909-10	8,330	22,768	1,695	22,441	2,917		58,151
1910-11	8,321	23,412	1,634	22,952	2,795		59,114
1911-12	8,231	24,193	1,371	23,986	2,821		60,602

The area devoted to vines in the Commonwealth attained its highest point in the season 1904-5, when a total of 65,673 acres was reached. Each of the five following seasons shewed a diminution, the area in 1909-10 being reduced to 58,151 acres; this decline was in evidence in all the States. An increase took place in each of the two succeeding seasons, the total Commonwealth area under vines amounting to 60,602 acres in 1911-12.

The wine-growing industry in Australia, more particularly in Victoria and New South Wales, received a severe check on account of various outbreaks of phylloxera which took place in different parts of these States. With a view to its eradication extensive uprooting of vineyards in the infested areas was undertaken, while further planting within such areas, except with phylloxera-resisting vines, was prohibited.

In the States of Victoria, South Australia, and Western Australia satisfactory increases in the area under vines were in evidence in 1911-12, while in Queensland and New South Wales, small decreases were shewn.

2. **Wine Production.**—The production of wine in Australia has not increased as rapidly as the suitability of soil and general favourableness of conditions would appear to warrant. The cause of this is probably twofold, being in the first place due to the fact that the Australians are not a wine-drinking people and consequently do not provide a local market for this product, and in the second to the fact that the new and comparatively unknown wines of Australia find it difficult to establish a footing in the markets of the old world, owing to the competition of well-known brands. Active steps are being taken in various ways to bring the Australian wines under notice, and it may be confidently expected that when their qualities are duly recognised the wine production of Australia will exhibit a rapid development. Particulars concerning the quantity of wine produced in the several States during 1901-2 and the past five seasons are contained in the table given hereunder:—

AUSTRALIAN WINE PRODUCTION, 1901-2 and 1907-8 to 1911-12.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	No production of wine in Tasmania.	Gallons.
1901-2	868,479	1,981,475	148,835	2,631,563	185,735		5,816,087
1907-8	778,500	1,365,600	90,191	2,061,987	153,755		4,450,033
1908-9	736,262	1,437,106	77,698	3,132,247	132,488		5,515,801
1909-10	808,870	991,941	91,410	2,569,797	140,559		4,602,577
1910-11	805,600	1,362,420	74,306	3,470,058	153,665		5,866,049
1911-12	850,210	983,423	57,358	2,921,597	162,559		4,975,147

3. **Relation to Population.**—In relation to population the area of the vineyards of the several States exhibits a well-marked decline during the seasons under review, the Commonwealth total having fallen during the period from 17 to 13 acres per 1000 of the population. Details for the period are furnished in the succeeding table:—

AREA OF VINEYARDS PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2	6	24	4	58	19	...	17
1907-8	6	21	4	56	13	...	15
1908-9	5	20	3	57	12	...	14
1909-10	5	18	3	57	11	...	13
1910-11	5	18	3	56	10	...	13
1911-12	5	18	2	57	10	...	13

4. **Imports and Exports.**—During the past ten years the importations of wine into the Commonwealth have exhibited a marked fluctuation, declining continuously in value from £161,945 in 1901 to £96,870 in 1904, then increasing continuously to £133,114 in 1908 and decreasing again in 1909 to £116,021, and again increasing in the two following years, the 1911 importations being valued at £184,924. The principal countries of origin of wine imported into Australia are France, Spain, Portugal, and Germany, the greater portion of the sparkling wines coming from France and of still wines from Spain and Portugal. Particulars relative to the importations of wine into the Commonwealth during 1901 and the past five years are given hereunder:—

COMMONWEALTH IMPORTS OF WINE, 1901 and 1907 to 1911.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1901	55,341	165,472	220,813	104,700	57,245	161,945
1907	50,393	67,906	118,299	94,549	26,397	120,946
1908	56,806	68,252	125,058	106,108	27,006	133,114
1909	47,669	60,946	108,615	91,046	24,975	116,021
1910	50,982	70,903	121,885	97,296	29,106	126,402
1911	78,115	75,446	153,561	153,561	31,363	184,924

The principal countries to which wine is exported from Australia are the United Kingdom and New Zealand, a small but fairly regular export trade being also carried on with India, Ceylon, Fiji, and the South Sea Islands. Details concerning the exports of wine from Australia during 1901 and the past five years are given in the following table:—

COMMONWEALTH EXPORTS OF WINE, 1901 and 1907 to 1911.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1901	2,936	863,147	866,083	6,972	122,751	129,723
1907	2,771	979,527	982,298	5,233	121,811	127,044
1908	2,824	728,421	731,245	4,541	98,333	102,874
1909	2,649	974,418	977,067	4,455	121,116	125,571
1910	2,880	949,033	951,913	5,340	123,593	128,933
1911	2,343	1,097,624	1,099,967	4,126	147,608	151,734

The sparkling wine included in the foregoing table consists mainly of foreign wine re-exported.

5. Other Viticultural Products.—In addition to grapes for wine-making purposes, large quantities are grown in all the States for table use, while, particularly in Victoria and South Australia, the drying of raisins and currants is also carried on. The quantities of table grapes grown in the several States during 1901-2 and the past five seasons are as follows:—

Season.	TABLE GRAPES, 1901-2 and 1907-8 to 1911-12.						
	N.S. W.	Victoria	Q. land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	3,475	5,110	750*	2,800*	1,100*	...	13,235
1907-8	2,978	3,325	1,044	2,805	2,715	...	12,867
1908-9	3,150	3,018	1,336	3,214	1,982	...	12,700
1909-10	4,181	3,189	1,520	2,496	3,928	...	15,314
1910-11	3,914	2,913	1,254	2,531	3,200	...	13,812
1911-12	4,223	3,102	973	2,123	3,506	...	13,927

* Estimated.

Statistics of the quantities of raisins and currants dried are available for a series of years for Victoria and South Australia, and are as follows for 1901-2 and the past five seasons:—

RAISINS AND CURRANTS DRIED, 1901-2 and 1907-8 to 1911-12.

Season.	Raisins.		Currants.	
	Victoria.	Sth. Australia.	Victoria.	Sth. Australia.
	lbs.	lbs.	lbs.	lbs.
1901-2	3,083,665	822,080	285,157	382,256
1907-8	7,685,104	2,742,656	1,169,280	2,235,184
1908-9	7,788,032	3,136,784	1,336,048	2,738,288
1909-10	9,076,928	3,114,496	3,069,696	4,037,824
1910-11	8,883,616	3,891,440	2,956,128	4,509,232
1911-12	11,527,488	3,880,912	5,240,368	5,229,840

In New South Wales, Queensland, and Western Australia also small quantities of raisins and currants are dried, but until recently no statistics were collected. The quantity so produced in New South Wales amounted to 100,912 lbs. in 1907-8, 160,720 lbs. in 1908-9, 165,984 lbs. in 1909-10, 297,472 lbs. in 1910-11 and 429,968 lbs. in 1911-12. For Queensland and Western Australia there are no particulars available.

§ 15. Orchards and Fruit Gardens.

1. **Nature and Extent.**—Fruit-growing has made rapid progress in the Commonwealth during recent years, the area devoted thereto having increased in the past ten years by no less than 47,749 acres. The States in which the increase was most marked were:—Tasmania, 16,383 acres; Western Australia, 12,118 acres; Victoria, 9930 acres; and South Australia, 6899 acres. During the same period the Queensland fruit-growing area increased slightly, while that in New South Wales exhibited a decline of 63 acres. The increased areas in Tasmania and Western Australia are mainly due to extensive plantings of apple trees with a view to the possibilities of the London market for fresh fruit. The total area devoted to orchards and fruit gardens in the several States is given hereunder:—

COMMONWEALTH ORCHARDS AND FRUIT GARDENS, 1901-2 and 1907-8 to 1911-12.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	F. Cp Terr.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2...	48,448	50,055	14,396	16,315	6,076	11,485	...	...	146,775
1907-8...	46,714	54,111	14,397	20,736	13,900	19,441	...	...	169,299
1908-9...	45,880	54,946	14,104	20,855	15,016	20,757	...	...	171,558
1909-10	45,892	56,108	15,360	21,760	15,609	24,069	...	...	178,798
1910-11	47,533	57,375	15,153	22,410	16,738	25,934	18	...	185,156
1911-12	48,385	59,985	16,817	23,214	18,194	27,868	13½	48	194,524

The varieties of fruit grown differ materially in various parts of the several States, and range between such fruits as the pineapple, paw-paw, mango, and guava of the tropics, and the strawberry, the raspberry, and the currant of the colder parts of the temperate zone. The principal varieties grown in Victoria are the apple, plum, peach, apricot, cherry, and pear. In New South Wales citrus fruits (orange, lemon, etc.) occupy the leading position, although apples, pears, peaches, plums, and apricots are also extensively grown. In Queensland the banana, the orange, the pineapple, the apple, the peach, the mango, and the plum are the varieties most largely grown. In South Australia, in addition to the apple, pear, peach, apricot, plum, orange, and lemon,

the almond and the olive are also largely grown. In Western Australia the apple, orange, peach, pear, plum, fig, and apricot are the sorts chiefly grown, while in Tasmania although the apple represents more than four-fifths of the area in that State devoted to fruit-growing, small fruits, such as the currant, raspberry, and gooseberry, are very extensively grown, and the balance of the area is mainly occupied with the pear, plum, apricot, peach, and cherry.

2. Relation to Population.—In relation to population the orchards and fruit gardens of the Commonwealth have exhibited an increase during the past ten seasons more than compensating for the decline which was experienced in the case of vineyards. Taking the two in conjunction the relative area under vineyards and orchards has, during the period, remained practically stationary at about 55 acres per 1000 of population. Details for 1901-2 and the past five seasons are as follows :—

AREA OF ORCHARDS AND FRUIT GARDENS PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	N.T.	F. Cp. Terr.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2...	35	41	28	45	31	66	...	...	38
1907-8...	31	44	26	55	55	103	...	...	41
1908-9...	29	44	25	54	58	109	...	...	41
1909-10	28	44	27	55	59	125	...	...	41
1910-11	29	44	25	55	60	134	4	...	42
1911-12	29	44	27	56	62	144	4	25	43

3. Commonwealth Imports and Exports.—A very considerable fruit trade, both import and export, is carried on by the Commonwealth with overseas countries, the major portion of the importations consisting of dried fruits, while the bulk of the exports is made up of fresh fruits. Amongst the imports the principal dried fruits are currants, dates, sultanas, and raisins, and the principal fresh fruits bananas, oranges, lemons, and apples. The currants imported are mainly of Greek origin, the dates of Arabian, Persian, and Turkish, the raisins mainly of Spanish, and the sultanas of Turkish origin. Of the fresh fruits imported during 1911 the bananas were chiefly from Fiji, the oranges and lemons from Italy, and the apples from Canada. The dried fruits imported during the year were valued at £68,942, and the fresh at £197,924. In 1907 a very marked development in the trade in Australian dried fruits took place, the total export for the year being valued at £76,872, of which £71,506 represented Australian fruits and £5366 re-exports of foreign fruits. In 1908 the total export of dried fruits from Australia was valued at £35,359, of which £33,111 represented Australian fruits, and £2248 re-exports of foreign fruits. There was a further decline in 1909, when the total value of exports was only £13,013, made up of £11,826 of Australian produce, and £1187 of re-exports. There was a small increase in the total exports in 1910, and a further advance in 1911, the exports for the latter year amounting to £23,900; of this sum £20,133 represented Australian produce and the balance of £3767 re-exports of foreign fruits. The principal consignees of Australian dried fruits exported were United Kingdom and New Zealand. The fresh fruits exported during the year were valued at £420,780, and consisted mainly of apples. These were all of Australian origin with the exception of re-exports valued at £594. The principal countries to which these were sent were the United Kingdom, Germany, New Zealand, Brazil, United States of America, and India. The value of the net imports of dried fruits for the year 1911 was £45,042, whilst in the case of fresh fruits, the value of the net exports was £222,856, the second largest net export value since 1904.

Particulars concerning the overseas imports and exports of dried fruits for 1901 and the last five years are as follows :—

COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF DRIED FRUITS.

1901 and 1907 to 1911.

Year.	Oversea Imports.		Oversea Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1901	14,265,731	179,305	831,996	14,208	13,433,735	165,099
1907	13,250,392	134,736	5,281,608	76,872	7,968,784	57,864
1908	10,351,443	99,518	2,509,640	35,359	7,841,803	64,159
1909	13,242,198	121,059	1,089,730	13,013	12,152,468	108,046
1910	9,885,118	89,076	973,171	14,765	8,911,947	74,311
1911	6,526,498	68,942	1,291,795	23,900	5,234,703	45,042

Similar information with regard to the Commonwealth overseas trade in fresh fruits for the same period is contained in the table given hereunder:—

COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF FRESH FRUITS,

1901 and 1907 to 1911.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Centals.	£	Centals.	£	Centals.	£
1901	45,355	50	167,326	50	121,971	01
1907	189,052	95,015	435,534	266,160	246,482	171,145
1908	166,341	107,666	377,926	263,307	211,585	155,641
1909	250,311	146,081	372,308	243,699	121,997	97,618
1910	187,733	90,100	500,661	322,694	312,928	232,594
1911	338,749	197,924	651,837	420,780	313,088	222,856

* Not available.

4. **Jams and Jellies.**—A small overseas trade in jams and jellies is carried on by the Commonwealth, the value of the imports for the year 1911 amounting to £3304, and of the exports to £20,896. The country of origin of the bulk of the importations is the United Kingdom, while the destinations of the exports are principally South Africa, Ceylon, Philippine Islands and Fiji. Particulars relative to imports and exports for 1901 and the last five years are as follows:—

COMMONWEALTH OVERSEA TRADE IN JAMS AND JELLIES, 1901 and 1907 to 1911.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1901	1,312,377	23,358	4,140,072	64,389	2,827,695	41,031
1907	297,634	6,967	1,639,239	24,561	1,341,605	17,594
1908	280,525	6,898	1,714,060	26,155	1,433,535	19,257
1909	334,738	7,956	1,706,400	26,124	1,371,662	18,168
1910	365,752	8,859	1,814,002	28,372	1,448,250	19,513
1911	322,487	8,304	1,288,729	20,896	966,242	12,592

5. **Preserved Fruit.**—Details concerning the quantities and values of preserved fruit imported into and exported from the Commonwealth cannot readily be obtained, owing to the fact that in the Customs returns particulars concerning fruit and vegetables are in certain cases combined. The total value of fruit and vegetables, other than fresh fruits, dried fruits, potatoes, and onions, imported into Australia during 1911 was £67,620, and the corresponding value of exports was £29,245.

§ 16. Minor Crops.

1. **Nature and Extent.**—In addition to the leading crops which in the foregoing pages have been dealt with in some detail, there are many others which, owing either to their nature or to the fact that their cultivation has advanced but little beyond the experimental stage, do not occupy so prominent a position. Some of the more important of these are those which may be classed under the heads of Market Gardens, Pumpkins and Melons, Turnips, Nurseries, Grass Seed, Tobacco, Hops, and Millet, while the possibilities of Cotton-growing in the tropical portions of the Commonwealth have in recent years received considerable attention, although the industry cannot yet be said to have assumed definite shape. The total area in the Commonwealth during the season 1911-12 devoted to minor crops was 68,927 acres, of which market gardens accounted for 30,292 acres.

2. **Market Gardens.**—Under this head are included all areas on which are grown mixed vegetables for sale. Where considerable areas are devoted to the production of one vegetable, such for instance as the potato, the onion, the melon, the tomato, etc., these crops are usually not included with market gardens, but are shewn either under some specific head, or under some such general head as "Other Root Crops," or "All other Crops." The area under market gardens in the several States of the Commonwealth during 1901-2 and each of the last five seasons is given in the table hereunder:—

COMMONWEALTH MARKET GARDENS, 1901-2 and 1907-8 to 1911-12.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	Fd. C ^y . Terr.	C ^y wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2	7,834	8,752	2,328	9,005	2,142	1,746	...	...	31,807
1907-8	10,052	9,022	2,365	2,961	3,543	1,791	...	...	29,734
1908-9	10,331	9,279	2,875	2,818	3,471	1,603	...	...	30,377
1909-10	10,254	10,214	2,677	2,784	3,481	1,720	...	...	31,130
1910-11	9,813	10,778	2,317	2,818	3,576	1,741	*58	...	31,101
1911-12	9,488	10,331	2,293	2,848	3,120	2,144	58	10	30,292

* Included with South Australia prior to 1910-11.

In all the States the area for 1907-8 was in excess of that for 1901-2 with the exception of South Australia, where the falling-off is more apparent than real, being in large part due to a change in the classification of crops introduced in connection with the new system of collection which came into force for 1907-8. It is believed that the figures given for the earlier years are considerably in excess of the truth.

3. **Grass Seed.**—The total area under this crop during 1911-12 was 5926 acres, of which 4007 acres were in Tasmania, 1188 acres in Victoria, 719 acres in Queensland, and 12 acres in South Australia. The total yield for 1911-12 was 87,727 bushels, or 14.8 bushels per acre.

4. **Tobacco.**—The tobacco-growing industry is one which has experienced marked fluctuations in Australia and which once promised to occupy an important place amongst the agricultural industries of the Commonwealth. Thus, as early as the season 1888-9 the area under this crop amounted to as much as 6641 acres, of which 4833 were in New South Wales, 1685 in Victoria, and 123 in Queensland. This promise of prosperity was, however, not fulfilled, and after numerous fluctuations, in the course of which the Victorian area rose in 1895 to over 2000 acres, and that in Queensland to over 1000 acres, the total area under tobacco for the season 1911-12 was only 2449 acres, distributed as follows:—New South Wales, 1501 acres; Victoria, 356 acres; and Queensland, 592 acres. This decline in production appears to have been due to the comparatively

small demand which existed in Australia for the locally-produced leaf, and to the fact that the cost of production and preparation in the Commonwealth prevented the Australian leaf from obtaining a footing in the outside markets. Probably under more favourable circumstances, and with greater attention given to the production of leaf of the best quality only, the industry is one which will eventually assume considerable proportions. In all the States in which its cultivation has been tried the soil and climate appear to be very suitable for the growth of the plant, and the enormous importations of tobacco in its various forms into the Commonwealth furnish an indication of the extensive local market which exists for an article grown and prepared in such a manner as to meet with the requirements of consumers. The value of the net importations of tobacco into the Commonwealth during the year 1911 amounted to £777,378, comprising unmanufactured tobacco (£505,514), cigars (£170,104), cigarettes (£44,164), manufactured tobacco (£56,585), and snuff (£1011).

5. **Pumpkins and Melons.**—The total area under this crop in the Commonwealth during 1911-12 was 11,794 acres, of which 3678 acres were in New South Wales, 2328 acres in Victoria, 5421 acres in Queensland, and 364 acres in Western Australia; the production for the first three named was 11,223. 20,343 and 16,555 tons respectively; the quantity produced in Western Australia is not available.

6. **Hops.**—Hop-growing in the Commonwealth is practically confined to Tasmania and some of the cooler districts of Victoria, the total area for the season 1911-12 being 1154 acres, of which 1029 acres were in Tasmania, and 122 acres in Victoria; a small area of 3 acres was also grown in South Australia. The Tasmanian area, though still small, has increased rapidly during the past nine years, the total for the season 1901-2 being only 599 acres. On the other hand, the Victorian area, which in 1901-2 was 307 acres, has diminished to 122 acres in 1911-12. The cultivation of hops was much more extensive in Victoria some thirty years ago than at present, the area devoted to this crop in 1883-4 being no less than 1758 acres. During the year 1911 the net importations of hops into the Commonwealth represented a weight of 863,226 lbs. and a value of £46,117. The total value of the net importations of hops into Australia during the past ten years amounted to £501,442, thus indicating the existence of a regular and extensive local demand.

7. **Millet.**—Millet appears in the statistical records of three of the Commonwealth States. The total area devoted thereto in 1911-12 was 2449 acres, of which 1501 acres was in New South Wales, 592 in Queensland and 356 in Victoria. The particulars here given relate to millet grown for grain and fibre. That grown for green forage is dealt with in the section relating thereto.

8. **Nurseries.**—In all the States somewhat extensive areas are devoted to nurseries for raising plants, trees, etc., but statistics concerning the area so occupied for flowers, fruit trees, etc., are not available, and so far as they relate to forestry are given elsewhere.

9. **Cotton.**—Cotton-growing on a small scale has been tried in Queensland, but so far without very marked success. The area under cotton, though fluctuating, has shewn an upward tendency during the past five years. In 1907-8 300 acres were under cultivation in Queensland, while 605 acres were devoted to this crop in 1911-12, giving a yield of 186,894 lbs. of seed cotton, valued at £4672. Hopes are entertained that with the invention of a mechanical device for the picking of the cotton the industry will become firmly established, since the soil and conditions appear eminently suitable for the growth of this crop. Small areas in the Northern Territory have also been planted with cotton, and 20 acres were under cultivation in 1911-12. The tropical portions of Western Australia have also long been regarded as suitable for its cultivation.

10. **Coffee.**—Queensland is the only State of the Commonwealth in which coffee-growing has been at all extensively tried, and here the results have up to the present

time been far from satisfactory. The total area devoted to this crop reached its highest point in the season 1901-2, when an area of 547 acres was recorded. Since then the area continuously declined to 1906-7, when it was as low as 256 acres. During the season 1907-8 an improvement occurred and the total reached was 304 acres, succeeded by a fall to 235 acres in 1908-9, 200 acres in 1910-11, and 198 acres in 1911-12. In the last-mentioned season the yield amounted to 80,871 lbs., valued at £3083.

11. **Other Crops.**—Miscellaneous small crops are grown in the several States, amongst which may be mentioned tomatoes, rhubarb, artichokes, arrowroot, chicory, and flowers.

§ 17. Bounties on Agricultural Products.

1. **General.**—The Bounties Act of 1907 passed by the Federal Parliament in order to encourage the manufacture and production of certain articles in the Commonwealth, includes among the number of items on which bonuses are payable, several agricultural products. The most important of these, viz., sugar, has been referred to on page 394 of this publication. Minor products of the soil on which these bounties are payable are as set out in the following table :—

AGRICULTURAL PRODUCTS (OTHER THAN SUGAR) ON WHICH BOUNTIES ARE PAYABLE.

Article.	Period dating from 1st July, 1907, during or in respect of which Bounty may be paid.	Rates of Bounty.	Maximum amounts which may be assigned in any one year.	Amount available for year 1912-13.
Cotton, ginned ...	8 years	10 % on market value	£ 6,000	£ 29,696
Fibres—				
New Zealand flax ...	10 "	10 " " "	3,000	15,000
Flax and hemp ...	5 "	10 " " "	8,000	39,151
Jute ...	5 "	20 " " "	9,000	45,000
Sisal hemp ...	10 "	10 " " "	3,000	14,811
Oil materials supplied to an oil factory for the manufacture of oil—				
Cottonseed ...	8 "	10 " " "	1,000	4,956
Linseed (flax seed) ...	5 "	10 " " "	5,000	24,994
Rice, uncleaned ...	5 "	20s. per ton	1,000	5,000
Coffee, raw, as prescribed	8 "	1d. per lb.	1,500	6,972
Tobacco leaf for the manufacture of cigars, high grade, of a quality to be prescribed ...	5 "	2d. " " "	4,000	19,435
Fruits—				
Dates (dried) ...	15 "	1d. " " "	1,000	5,000
Dried (except currants and raisins) or candied, and exported ...	5 "	10 % on market value	6,000	27,055

* Any unexpended amount assigned in any year is available for the years following.

Although the rate of bonus on the several articles, is, as shewn above, fairly liberal, the bounties have not been availed of to any great extent, as will be seen from the following table, which gives particulars as to the quantity of the articles raised and the amounts paid as bounties in respect thereof for the five financial years which have elapsed since the operation of the Act :—

PARTICULARS OF BOUNTIES PAID ON AGRICULTURAL PRODUCTS (OTHER THAN SUGAR), 1907-8 to 1911-12.

Articles.		Quantity produced on which Bounties were paid.					Amount paid as Bounties.				
		1907-8.	1908-9.	1909-10.	1910-11.	1911-12.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
Cotton, ginned	lbs.	662	21,865	24,994	53,179	60,443	10	32	34	91	137
Fibres—											
Flax and hemp...	tons	...	32	28	28	137	...	126	120	123	480
Sisal hemp	"	...	14	11	45	8	...	34	25	112	18
Oil materials supplied to an oil factory for the manufacture of oil—											
Cottonseed	...	...	36,491	45,610	96,312	...	...	12	10	22	...
Linseed (flax seed)	...	...	36	...	...	...	...	6	...	...	...
Coffee, raw, as prescribed	lbs.	2,111	53,365	28,134	26,825	16,269	9	222	117	112	68
Tobacco leaf for the manufacture of cigars, high grade, of a quality to be prescribed	lbs.	...	14,538	33,063	10,902	9,258	...	121	276	90	78
Fruits—											
Dried (except currants and raisins) or candied, and exported	lbs.	54,992	12,096	23,932	454,075	636,452	1,061	23	104	940	1,734

During the year, 1911-12 the total amount paid in respect of cotton, sisal hemp, and coffee was claimed by the State of Queensland, with the exception of the small amount of £1, which was paid in New South Wales on account of cotton. South Australia collected £992, Tasmania £360, and Victoria £382 of the fruit bonus, while £78 of the bounty paid for tobacco leaf was paid to Queensland, the remaining £5 being earned in Victoria. The last-mentioned State also claimed the total amount paid for flax and hemp.

No bounties have yet been paid on New Zealand flax, jute, uncleaned rice or dates.

1907-8	000,0	value	10-2 on market	8 years	...	Cotton ginned
000,81	000,8	"	10	10	...	Fibres
...	000,0	"	20	2	...	New Zealand flax
...	...	"	...	...	...	Jute

1. **General.**—In the early days of settlement and cultivation in the Commonwealth, scientific cultivation was in a much less developed state than it is to-day. The early farmers were neither under the necessity, nor were they as a rule aware of the need, of supplying the constituents to the soil demanded by each class of crop. The widely-divergent character of the soils in the Commonwealth, their degeneration by repeated cropping, the limitations of climatic conditions, the difficulties of following any desired order of rotation of crops, all rendered it necessary to give attention to artificial manuring. The introduction of the modern seed-drill, acting also as a fertiliser distributor, has greatly facilitated the use of artificial manures, and much land formerly regarded as useless for cultivation has now been made available. There is reason to believe that this feature will be even more strikingly characteristic of the future.

2. **Fertilisers Acts.**—In order to protect the interests of users of artificial manures legislation has been passed in each of the States, regulating the sale and preventing the adulteration of fertilisers. The following is a list of such Acts in force:—

New South Wales	...	The Fertilisers Act of 1904
Victoria	...	The Artificial Manures Acts of 1904 and 1910.
Queensland	...	The Fertilisers Act of 1905
South Australia	...	The Fertilisers Act of 1900; amended 1903.
Western Australia	...	The Fertilisers and Feeding Stuffs Act of 1904; amended 1905.
Tasmania	...	The Manures Adulteration Acts of 1893 and 1898.

As regards their main features these measures are practically identical. The words "fertiliser" and "manure," as used in these Acts, mean any substance containing nitrogen, phosphoric acid, or potash, manufactured, produced, or prepared in any manner for the purpose of fertilising the soil or supplying nutriment to plants, but do not include farm-yard or stable manure or similar articles in their natural or unmanufactured state. The Acts provide that every vendor of fertilisers must, within a stated period, forward to the Secretary of Agriculture, or corresponding officer, samples of the fertilisers on sale by him, together with the distinctive names or brands by which they are known, and the price at which he intends to sell during the year. On every bag, package, or bundle of fertiliser sold, or exposed for sale, he must attach a printed label shewing thereon:—

- (i.) The number of net pounds of fertiliser in such bag or parcel;
- (ii.) The figure or trade mark attached to the fertiliser and intended to identify it;
- (iii.) The proportion per centum of nitrogen, phosphoric acid, and potash contained therein.

In addition to the above the vendor must furnish every purchaser with an invoice certificate, signed by himself or his agent, stating his full name and place of business and the quality of the fertiliser sold.

Any officer or analyst appointed under the Acts may enter any manufactory, warehouse, store, vessel, wharf, railway station, conveyance, or other place where fertiliser is manufactured, stored, exposed for sale, or in course of delivery or transit, and demand and take samples of such fertiliser. Every sample so taken must be divided by such officer into three parts, and each marked, sealed, and fastened by him in the presence of the person in charge, and disposed of as follows.—

- (i.) One part to be taken by person in charge.
- (ii.) One part to be used for analysis.
- (iii.) One part to be retained by the officer for future comparison.

Every buyer of fertiliser is entitled to submit a sample to the analyst appointed under the Act, and receive a certificate of its analysis. If the analysis prove it to be under what it is represented to be, the vendor must pay the cost of analysis.

3. Imports.—The local production of artificial manures falls short of the existing demand, and large quantities are consequently imported.

The importation of fertilisers has increased nearly 200 per cent. since 1901. The chief items, both as regards quantity and value, are those relating to phosphates, a fertiliser which has proved itself to be very suitable for the growing of cereals in Australian soils. The greatest quantity of the manufactured superphosphates imported from any one country is obtained from the United Kingdom, whence came over 50 per cent. of the total imported during 1911, while Japan contributed 31½ per cent., the Netherlands 10½ per cent., and Germany 6 per cent., the balance, representing about 2 per cent., being imported from Sweden and Belgium. Ocean Island, with about 71 per cent., was the principal contributor of rock phosphates, of the balance about 28 per cent. was obtained from Christmas Island, and 6½ per cent. from the Pacific Islands. Guano is imported chiefly from Ocean Island, one of the South Sea group, and in lesser quantities from Malden Island and Peru, while India and the East Indies have practically a monopoly of the bone-dust trade with the Commonwealth.

The increasing demand for artificial manures is shown in the following table. It will be noticed that the quantity of rock phosphates imported during the last four years has shown a marked increase over previous years. The imports were particularly large during 1910, when an increase of over 100 per cent. is shown over the quantity imported in the previous year. The figures for the manufactured superphosphates showed an increase of about 50 per cent. during that year, while those for 1911 shew a further increase of some 5 per cent.

COMMONWEALTH IMPORTS OF FERTILISERS, 1907 to 1911.

Fertiliser.		1907.	1908.	1909.	1910.	1911.
Bonedust	Cwt.	93,798	74,657	71,959	12,740	4,164
"	£	24,103	18,088	17,632	3,294	1,086
Guano	Cwt.	606,630	696,660	468,215	788,304	484,003
"	£	75,130	84,961	56,723	89,961	52,447
Superphosphates	Cwt.	780,464	610,596	757,515	1,196,613	1,254,892
"	£	133,352	94,203	105,229	174,751	183,832
Rock Phosphates	Cwt.	769,630	1,267,665	1,006,030	2,112,127	1,721,140
"	£	103,609	183,817	143,246	294,212	228,292
Other	Cwt.	227,689	197,240	151,241	377,327	161,121
"	£	52,975	60,676	38,007	107,573	47,479
Total ... {	Cwt.	2,478,211	2,846,818	2,454,960	4,487,111	3,625,320
" ... {	£	389,169	441,745	360,837	669,791	513,136

4. **Exports.**—The subjoined table shews the exports of artificial manures for the years 1907 to 1911. Practically the whole of the fertiliser is manufactured locally, and is shipped mainly to New Zealand and the Pacific Islands:—

COMMONWEALTH EXPORTS OF FERTILISERS, 1907 to 1911.

Fertiliser.		1907.	1908.	1909.	1910.	1911.
Bonedust	Cwt.	59,878	65,491	62,637	80,602	122,456
"	£	16,001	17,069	16,571	19,066	34,787
Guano	Cwt.	5,000	...	...	2,812	2,719
"	£	875	...	...	490	603
Superphosphates	Cwt.	194,943	250,236	235,939	260,261	200,925
"	£	41,041	47,418	44,041	51,051	38,007
Rock Phosphates	Cwt.	5,028	5,077	3,320	11,190	2,106
"	£	1,062	1,145	658	1,819	353
Soda Nitrate	Cwt.	1,980	429	3,579	6,215	6,107
"	£	1,168	222	2,075	2,844	3,098
Ammonia Sulphate	Cwt.	...	70,258	69,894	69,015	56,630
"	£	...	45,915	42,766	43,081	37,141
Other	Cwt.	148,816	120,524	177,189	229,841	215,382
"	£	50,813	28,565	33,880	48,969	53,510
Total ... {	Cwt.	415,645	512,015	552,558	659,936	606,325
" ... {	£	110,960	140,334	139,991	167,340	167,499

5. **Statistics of Use of Fertilisers.**—The statistics available in connection with the use of manures in the Commonwealth for a series of years refer to New South Wales, Victoria, South Australia, and Western Australia; those for Tasmania were collected for the first time for 1911-12. Particulars concerning the first-mentioned State are given hereunder:—

FERTILISERS USED IN NEW SOUTH WALES, 1907-8 to 1911-12.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crop.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1907-8	2,572,873	423,678	16.47	144,021	13,356
1908-9	2,717,085	509,262	18.74	216,078	15,545
1909-10	3,180,561	826,197	25.98	189,008	21,659
1910-11	3,386,017	1,030,554	30.43	186,204	25,017
1911-12	3,628,513	1,407,453	38.80	178,689	33,820

Particulars for Victoria for 1901-2 and the past five seasons are as follows:—

FERTILISERS USED IN VICTORIA, 1901-2 and 1907-8 to 1911-12.

Season.	Total Area of Crops.	Farmers Using Manure.	Area Manured.		Manure Used.	
			Aggregate.	Percentage to Total Area of Crop.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	No.	Acres.	%	Tons.	Tons.
1901-2 ...	2,965,681	11,439	556,777	18.77	153,611	23,535
1907-8 ...	3,232,523	23,783	2,018,079	62.43	232,394	62,337
1908-9 ...	3,461,761	24,487	2,053,987	59.33	235,492	64,715
1909-10 ...	3,658,535	26,690	2,407,331	65.80	197,446	77,579
1910-11 ...	3,952,070	27,845	2,714,854	68.69	203,884	86,316
1911-12 ...	3,640,241	26,159	2,676,408	73.52	205,739	82,581

The figures relating to the use of fertilisers in South Australia, for the years for which they are available, are shewn in the table below:—

FERTILISERS USED IN SOUTH AUSTRALIA, 1907-8 to 1911-12.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crop.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1907-8 ...	2,265,017	1,573,861	69.49	124,092	60,008
1908-9 ...	2,321,812	1,712,394	73.75	120,648	64,842
1909-10 ...	2,530,301	2,031,832	80.30	133,935	76,413
1910-11 ...	2,746,334	2,235,578	81.40	129,918	81,899
1911-12 ...	2,965,338	2,511,130	84.68	134,503	87,475

Corresponding particulars relative to Western Australia for the seasons 1904-5 and 1907-8 to 1911-12 are given in the following table, and furnish interesting evidence of the rapid extension of the use of manures in that State:—

FERTILISERS USED IN WESTERN AUSTRALIA, 1904-5 and 1907-8 to 1911-12.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crops.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1904-5 ...	327,391	205,923	63.90	72,523	10,787
1907-8 ...	493,837	391,146	79.21	73,809	17,273
1908-9 ...	585,339	493,545	84.32	61,834	21,358
1909-10 ...	722,086	608,870	84.32	67,263	24,654
1910-11 ...	855,024	773,561	90.47	62,229	33,194
1911-12 ...	1,072,653	992,463	92.52	51,600	43,843

Statistics relating to the use of manures in Tasmania were collected for the first time in 1911-12, and are as follows:—

FERTILISERS USED IN TASMANIA, 1911-12.

Total Area of Crops.	Area Manured.		Manure Used.	
	Aggregate.	Percentage to Total Area of Crops.	Natural (Stable-yard, etc.).	Artificial
Acres.	Acres.	%	Tons.	Tons.
270,000	129,914	48.12	25,792	8,750

A marked increase in the proportion of cropped land treated with manure is in evidence in all of the States for which returns are available. Thus in New South Wales the area of manured land represented in 1907-8 only 16½ per cent. of the area under crop, as against 38½ per cent. in 1911-12. Similarly, in Victoria the percentage increased from 18½ per cent. in 1901-2 to 73½ per cent. in 1911-12, in South Australia from 69½ per cent. in 1907-8 to over 84½ per cent. in 1911-12, and in Western Australia from 64 per cent. in 1904-5 to 92½ per cent. in 1911-12.

6. Local Production of Fertilisers.—Statistics relative to the local production of fertilisers are necessarily very incomplete, and detailed returns for fertiliser factories other than bone mills are not available. The number of firms engaged in the manufacture of artificial manures in the Commonwealth at latest available date was 78, made up as follows:—New South Wales, 20; Victoria, 24; Queensland, 13; South Australia, 12; Western Australia, 6; and Tasmania, 3. If, however, approximately complete returns of the quantities of fertilisers used in the various States could be given, a comparison with the importations would give valuable information, but, as already mentioned, such particulars are only available for four of the States prior to 1911-12, and even then do not furnish the whole of the information necessary.

7. Benefits Derived from the Use of Fertilisers.—There is little doubt that the increased and increasing use throughout the Commonwealth of fertilisers, natural and artificial, combined with the greater attention being devoted to fallowing and to the combination of sheep-farming with agriculture, is having the effect of improving the prospects of those dependent for a livelihood on the products of the soil. Reference has previously been made to the loss to the soil of phosphoric acid which the Commonwealth export of wheat and its milled products involves, and the necessity which thus arises for returning this ingredient in some form. Similarly, other staple products exported impose their respective tolls upon the soil of the Commonwealth, and the increased use of fertilisers furnishes evidence that producers are alive to the necessity for making good the deficiency so arising.

§ 19. Ensilage.

1. Value to Stockowners.—The use of ensilage as a substitute for green fodder during periods of drought or spells of dry weather, or for winter use, is less extensive in Australia than the circumstances would appear to warrant. There is, however, a growing disposition on the part of dairy farmers to make silos on their holdings, as they find that dairy cattle eat ensilage greedily, and that by its means the output of milk, both in regard to quantity and quality, may be kept up long after the supply of ordinary green food is exhausted. Sheepbreeders are also recognising the fact that during protracted periods of dry weather the silo enables them to keep their stock in good condition, and that lambing can take place satisfactorily. Ensilage thus obviates the expense of travelling or trucking sheep for hundreds of miles to get beyond the drought area, or the equally costly and even ruinous alternative of providing chaff for food at high prices and costly freight. In the rearing of lambs for the London market, ensilage appears to be destined to play an important part, as the lambs thrive upon it much better than upon

dry food. By the judicious economising of the surplus growth of green food with the use of the silo, farmers and squatters can carry more stock on their holdings than they otherwise would be justified in doing. Not only is the great waste of superabundant food thus avoided, but it becomes possible to change into a succulent and nutritious food much growth that in any other state would not be eaten by stock. Thus such vegetation as marsh mallows, thistles, weeds of all sorts, and even the swamp reed *Arundo phragmites*, which grows in great quantities in lagoons, billabongs, and swamps, are all eaten with avidity when offered to stock in the form of ensilage. The pit and stack silos are rapidly being superseded by those built of red gum and hardwood or concrete. This is found to a great extent to obviate the loss sustained by mould, at the same time reducing the risk of fire. The silos vary in capacity from forty to 130 tons. A portable silo made of iron which has been devised, is made in sections of such size and weight as to admit of ready handling. These silos can be increased in diameter or height by the addition of further sections.

2. Government Assistance in the Production of Ensilage.—The Government of Victoria, recognising the fact that defective methods of making ensilage have often been adopted, leading to partial or total failure, have for some years been making special efforts to educate the farming community in this respect, so that mistakes may be avoided and the conditions essential for the production of good ensilage may be better appreciated. These conditions vary with the climate and with the locality. The Government also undertakes the erection of silos on very liberal terms, repayment extending over a series of years. Experts supervise the erection of the silos, and give practical lessons as to packing them, etc. The New South Wales Government have, by giving advice in the "Agricultural Gazette" and by the issue of special bulletins, taken steps towards the education of the farmers. Silos have also been erected on the various experimental farms with a view to demonstrating the value of ensilage. No financial assistance is, however, given in New South Wales in this connection.

3. Quantity Made.—Particulars concerning the number of silos and the quantity of ensilage made in the several States of the Commonwealth in the seasons 1907-8 to 1911-12 are furnished in the table given hereunder:

COMMONWEALTH ENSILAGE-MAKING, 1907-8 to 1911-12.

	1907-8.		1908-9.		1909-10.		1910-11.		1911-12.	
	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.
New South Wales	212	12,856	300	27,468	364	34,847	258	29,616	158	20,477
Victoria	203	11,031	392	18,205	518	27,280	460	25,969	371	20,888
Queensland	63	2,949	59	4,654	79	4,517	97	5,804	61	4,979
South Australia	56	2,088	67	2,017	81	2,244	68	1,530	39	1,250
Western Australia	37	1,169	51	1,171	28	770	14	414	3	307
Tasmania	11	512	13	512	13	686	21	1,073	34	280
Commonwealth	582	30,605	880	54,027	1,083	70,344	918	64,406	672	47,581

* No. of holdings on which ensilage was made.

Since the drought of 1902-3 greater attention has been paid to ensilage than was previously the case, and during the four seasons ended 1909-10 a continuous and fairly rapid increase was in evidence in all the States, both in the number of holdings on which ensilage was made, and in the quantity produced. The season for 1911-12 shows a falling-off in all the States. The reduction cannot be accepted as an indication of a lessening of appreciation of the benefits of ensilage, but rather of the fact that stocks had not been drawn upon to any great extent during the previous two seasons.

§ 20. Agricultural Colleges and Experimental Farms.

1. **Introduction.**—It has been thought preferable to refer to what may be called the effort in the direction of agricultural education in this section rather than under the heading of education.

In most of the States agricultural colleges and experimental farms have been established with a view to promoting agriculture and to establishing improved and more scientific systems of stock-breeding and dairying. In these colleges and on some of the farms provision is made for the accommodation of pupils, to whom both practical and theoretical instruction is given by experts in various branches of agriculture. Analyses of soils and fertilisers are made, manures are tested, and elementary veterinary science, etc., is taught, while general experimental work is carried on with cereal and other crops, not merely for the purpose of shewing that it is practicable to produce certain crops in a given place, but also to shew how it is possible to make farming pay best in that locality. Opportunities are afforded for practice in general agricultural work, and instruction is given in the conservation of fodder, in cheese and butter making; in the management, breeding, and preparation for the market of live stock; in the eradication of pests and weeds; and in carpenters', blacksmiths', and other trades.

Travelling expert lecturers are sent to the various agricultural and dairying centres, and there is a wide distribution of periodical agricultural gazettes and bulletins on matters of importance at special seasons.

2. **Particulars of Agricultural Colleges and Experimental Farms.**—In the table given below particulars of agricultural colleges and experimental farms in the several States of the Commonwealth in 1911-12 are shewn. Tasmania is the only State in which such colleges or farms are not established.

PARTICULARS OF AGRICULTURAL COLLEGES AND EXPERIMENTAL FARMS IN THE COMMONWEALTH, 1911-12.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	C'wealth
Number of colleges	1	2	1	1	...	5
Number of experimental farms...	15	3	7	7	4	36
Total number of students ...	263	250	60	57	...	630
Total number of hands employed	163	102	65	43	19	392
Area under cereals and hay ... Acres	2,116	1,299	307	3,147	918	7,787
Area under fruit trees and vines... "	380	153	88	83	13	717
Area under all other crops ... "	772	311	366	301	109	1,859
Total area under crop	3,268	1,763	761	3,531	1,040	10,363
Area of arable land	5,536	4,532	1,361	6,993	3,314	21,736
Total area of farms	20,781	8,992	13,206	13,262	7,130	63,371
Number of Live Stock—						
Horses	No. 406	187	204	194	70	1,061
Cattle	838	487	846	280	205	2,656
Sheep	3,735	3,587	1,385	2,982	830	12,519
Pigs	758	339	305	449	218	2,069
Value of plant and machinery ... £	11,969	7,150	5,450	8,109	2,733	35,411
Value of produce for year ... £	23,235	14,181	3,140	7,805	(a)2,251	50,612

(a) Exclusive of particulars for one Experimental Farm.

3. **New South Wales.**—In order to meet the demand for agricultural training, and for the purpose of conducting experiments in various branches of agriculture and of disseminating agricultural knowledge, an agricultural college and farm and fifteen experimental farms are now established by the New South Wales Government. Theoretical instruction in agriculture, with practical illustrations, forms part of the curriculum of the Sydney Technical College. The School of Agriculture in the Sydney

University, which has been established for two years, is doing very satisfactory work. At the Hurlstone Continuation College there is a special course in both theoretical and practical agriculture for teachers. Instruction in "nature knowledge" is given in the State primary schools, many of which have their own experimental plots. As a means of further encouraging the study of agriculture the Department of Public Instruction has a travelling inspector in agriculture, whose duty it is to visit the country and metropolitan schools, giving lectures on the value, necessity, and advantages of agricultural knowledge, and giving practical demonstrations wherever practicable.

(i.) *Particulars of Agricultural College and Experimental Farms.* The following table shews the number of students at the Hawkesbury College and at the experimental farms at which students are received for each year from 1907 to 1911 inclusive:—

NEW SOUTH WALES.—NUMBER OF STUDENTS AT GOVERNMENT AGRICULTURAL COLLEGE AND EXPERIMENTAL FARMS, 1907 to 1911.

Name.	1907.	1908.	1909.	1910.	1911.
Hawkesbury Agricultural College ...	230	190	188	154	149
Wagga Farm ...	63	52	49	42	53
Bathurst Farm ...	23	25	32	33	34
Cowra ...	...	...	...	...	11
Yanco ...	...	...	...	...	11
Wollongbar Farm...	18	7	11	12	4
Dural ...	...	...	...	3	1
Berry Dairy Stud Farm ...	11	2	...	...	...
Total ...	345	276	280	244	263

The following table gives particulars of the Hawkesbury College and of fifteen experimental farms for the year ended the 31st March, 1912.

NEW SOUTH WALES.—PARTICULARS OF GOVERNMENT AGRICULTURAL COLLEGE AND EXPERIMENTAL FARMS AT THE 31st MARCH, 1912.

Name of College or Farm.	Total Area of Farm.	Total Area under Crop.	Area under Cereals and Hay.	Area under Fruit Trees and Vines.	Area under all other Crops.	Number of Hands Employ'd	Value of Plant and Machinery.	Value of Produce for the Year.
	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£
Hawkesbury	3,551	669	411	38	220	24	1,966	7,800
Wagga ...	3,228	882	690	95	97	15	1,318	5,411
Bathurst ...	680	477	212	43	222	15	2,419	3,140
Wollongbar	262	52	13	...	39	8	750	436
Berry ¹ ...	325	32	20	...	12	6	191	255
Howlong ² ...	220	45	8	37	...	8	285	295
Grafton ...	1,000	166	139	...	27	17	1,600	1,800
Glen Innes ...	1,105	290	196	26	68	12	588	1,115
Cowra ...	996	271	206	1	64	12	804	775
Pera ³ ...	556	50	25	25	...	3	197	798
*Raym'd T ² ...	610	25	...	25	...	4	...	200
Yanco ³ ...	1,883	119	56	63	...	25	875	593
Nyngan ...	4,400	160	138	...	22	5	556	562
Dural ...	37	30	2	27	1	4	200	55
Coonamble...	1,928	...	...	...	...	5	220	...
Temora ...	...	...	...	...	...	...	...	...

1. Dairy stud farm. 2. Viticultural station, *Raymond Terrace. 3. Irrigation farm.

4. **Victoria.**—In 1884, the Agricultural Colleges Act, passed to make provision for the establishment of agricultural colleges and experimental farms in Victoria, provided for the permanent reservation from sale of 150,000 acres of Crown lands by way of endowment of agricultural colleges and experimental farms, which, together with other lands reserved as sites for such institutions prior to the passing of the Act, are vested in three trustees appointed by the Governor. Provision was made for the appointment of a Council of Agricultural Education, consisting of eleven members, five of whom are elected by the members of the Agricultural Societies of the State, five are nominated by the Governor, whilst the Secretary for Agriculture is also a member of the Council and its Treasurer. Two agricultural colleges and three experimental farms, orchards and vineyards are now in existence in different parts of the State. There are five Agricultural High Schools under the control of the Education Department, while elementary experimental agriculture is taught at many of the State primary schools. Instruction in agriculture is also given at the technical schools at Melbourne and Bairnsdale.

(i.) *Particulars of Agricultural Colleges and Experimental Farms.* The table given hereunder furnishes particulars relating to the agricultural colleges of Dookie and Longerenong, and the three experimental farms:—

VICTORIA.—PARTICULARS OF GOVERNMENT AGRICULTURAL COLLEGES AND EXPERIMENTAL FARMS FOR THE YEAR 1911-12.

Name of College or Farm.	Total Area of Farm.	Total Area under Crop.	Area under Cereals and Hay.	Area under Fruit Trees & Vines.	Area under all other Crops.	Number of Hands Employed.	Value of Plant and Machinery.	Value of Produce for the Year.
	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£
Dookie	5,118	881	785	72	74	45	5,000	8,150
Longerenong	2,386	431	342	27	62	13	1,000	3,376
Rutherglen	918	197	130	38	29	31	900	2,155
Wyuna	540	238	92	1	145	5	*1,622	†
Burnley	35	15½	...	14½	1	8	250	500

* 1910, 1911 not available. † Not available.

5. **Queensland.**—Organised experimental agriculture in Queensland dates from the establishment of the Department of Agriculture and Stock, but such work as has been done in connection with stock-breeding, other than that carried on by private individuals, has been of later birth, and has been confined to dairy stock and draught horses. Agriculture in Queensland in the early nineties was upon the well-defined lines of the other States, so that the knowledge to be gained as to what could be profitably adapted to Queensland, with its varied climate and rainfall, covered a wide field. Instructors were appointed conversant with the different lines of agriculture, of which grain cultivation, dairying, fruit-growing, tobacco cultivation, and tropical agriculture, such as sugar, rubber, and spices, are the most important. This has been followed by the establishment of an agricultural college, of farms in the temperate parts of the State, and of nurseries in the tropical parts. With wheaten grain a system of experiments has been carried out for some years with the distinctive object of evolving a type of wheat adapted for Queensland, and as far as possible resistant to the attacks of rust. In dairying a commencement was made by despatching to the different farming centres properly equipped travelling dairies with the latest appliances. The export of Queensland dairy produce has arisen through this effort. No travelling dairies are, however, now employed. A fruit farm has been established, at which fruits suitable for or likely to adapt themselves to the Queensland climate and conditions have been experimented with during a series of years. To cope with the insect and fungus pests to which such fruits are peculiarly susceptible, careful inspection is made of fruits in the markets and for export, and every effort is put forth to prevent the introduction of fresh diseases and to exterminate those which are already within the State.

(i.) *Particulars of Agricultural College and Experimental Farms.* The table given below contains particulars of the Gatton Agricultural College and the seven experimental farms. Figures relating to the technical colleges are not available:—

QUEENSLAND.—PARTICULARS OF GOVERNMENT AGRICULTURAL COLLEGE AND EXPERIMENTAL FARMS FOR THE YEAR 1911.

Name of College or Farm.	Total Area of Farm.	Total Area under Crop.	Area under Cereals and Hay.	Area under Fruit Trees and Vines.	Area under all other Crops.	Number of Hands Employ'd	Value of Plant and Machinery.	Value of Produce for the Year.
	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£
Gatton ...	1,692	249	41	14	194	30	1,400	1,220
Biggenden ...	211	31	4	4	27	2	400	150
Roma ...	791	109	69	13	27	6	600	400
Gindie ...	8,611	62	35	4	23	5	650	350
Westbrook ...	1,300	66	12	37	17	7	1,000	300
Warrego ...	1,128	43	29	5	9	5	800	370
Kamerunga ...	40	17	...	3	14	6	200*	200*
Hermitage ...	493	184	121	8	55	4	600	350

* 1910 figures; 1911 not available.

6. *South Australia.*—To this State belongs the honour of starting the first experimental farm in the Commonwealth. As far back as the year 1879 a resolution was passed by the local Parliament in favour of the establishment of a School of Agriculture, with an experimental farm, under the charge of a professor of agriculture. Active operations in this connection were commenced in 1882, when the first series of plots of wheat were sown at Roseworthy. Experimental work, chiefly directed towards improving the wheat yield, has been developed along three main lines viz.: (a) The improvement of varieties of wheat, (b) the improvement of methods of cultivation, and (c) the use of manures. The Central Agricultural Bureau, established at Adelaide under the control of an Advisory Board, has an extensive membership distributed throughout the agricultural districts of the State. It assists farmers by the dissemination of knowledge, by helping to introduce new economic plants; by improving the breed of stock; and it acts as a means of keeping the Agricultural Department in touch with the producers. The branches of the bureau hold meetings at regular intervals in their several districts, ideas and methods as regards practical subjects are interchanged, and discussions are held on matters of general interest to agriculturists.

(i.) *Particulars of Agricultural College and Experimental Farms.* The subjoined table gives details of the several farms in the State during 1911-12:—

SOUTH AUSTRALIA.—PARTICULARS OF AGRICULTURAL COLLEGE AND EXPERIMENTAL FARMS FOR THE YEAR 1911-12.

Name of College or Farm.	Total Area of Farm.	Total Area under Crop.	Area under Cereals and Hay.	Area under Fruit Trees and Vines.	Area under all other Crops.	No. of Hands Employ'd	Value of Plant and Machinery.	Value of Produce for the Year.
	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£
Roseworthy ...	1,890	724	521	68	135	12	1,600	3,000
Kybybolite ...	2,256	485	349	15	121	7	850	520
Murray Bridge ...	58	29	14	...	15	2	245	129
Parafield ...	176	80	80	...	...	3	450	550
Exton and Veitch's Well ...	4,950	1,080	1,080	...	...	5	1,070	1,000
Shannon ...	1,164	318	318	...	...	3	570	530
Minburra ...	1,168	268	268	...	...	1	1,600	207
Turretfield ...	1,600	547	517	...	30	10	1,724	1,869

7. **Western Australia.**—A considerable amount of developmental work has been done of late years towards the promulgation of agricultural knowledge on the State farms at Chapman and Narrogin, and, more recently still, on the experimental farms at Brunswick and Nangeenan.

(i.) *Particulars of State and Experimental Farms.* Particulars of the farms at Narrogin, Chapman, Brunswick, and Nangeenan for the year 1911 are given hereunder:—

**WESTERN AUSTRALIA.—PARTICULARS OF STATE AND EXPERIMENTAL FARMS
FOR THE YEAR 1911.**

Name of Farm.	Total Area of Farm.	Total Area under Crop.	Area under Cereals and Hay.	Area under Fruit Trees and Vines.	Area under all other Crops.	Number of Hands Employed	Value of Plant and Machinery.	Value of Produce for Year.
	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£
Narrogin ...	2,826	308	265	13	30	4	589	716
Chapman ...	1,272	320	313	...	7	4	432	982
Brunswick ...	944	147	75	...	72	7	844	553
Nangeenan...	2,088	265	265	...	...	4	868	*1606

* 1910 figure; 1911 not available.

8. **Tasmania.**—In Tasmania there is a Council of Agriculture consisting of eleven members, whose duties are to collect and publish information of every kind calculated to prove beneficial to agriculturists, such as suitability of various districts for growth or production of animal and vegetable products, information respecting plants, methods of cultivation, breeding and feeding animals, and how best to improve the same: to prevent as far as possible the introduction and spread of diseases and pests, and to publish bulletins, abstracts, and reports containing all such information as may be desirable. Other matters embrace the employment of experts in any branch of agricultural science, distribution of plants and seeds for experiment, and the establishment of local boards of agriculture in different parts of the State. Lectures are given by the experts from time to time, and useful information and knowledge is diffused by means of the monthly gazette published by the Council, and also by means of special bulletins. There are no agricultural colleges or experimental farms, and practically no agricultural teaching is given in the elementary schools.

§ 21. Government Loans to Farmers.

1. **Introduction.**—All the Australian States have established systems under which financial aid is rendered to agriculturists by the Government. The principle upon which such aid is founded was probably first practically applied in Germany, viz., in the year 1770, when the *Landschaften Bank* was created. The establishment of the *Crédit Foncier* nearly a century later in France was a creation of a similar character. This latter institution was designed to enable house and land owners to raise money on mortgage at a low rate of interest, with facility for repayment by an annuity including redemption of the capital. It dates from 1852, but the mortgage bank known as the *Caisse Hypothécaire*, which, after a struggling existence, was finally liquidated in 1846, was based essentially on the same principle. Over the operations of the *Crédit Foncier*, created under governmental patronage and invested with such special privileges as to

virtually constitute it a monopoly, the Government exercised a direct control, viz., by appointing its governor and its two deputy-governors. The *Crédit Foncier* was empowered to lend money only on a first mortgage, and to the amount of one-half of the estimated value of houses and farms, and one-third that of vineyards, woods, and other plantations, and the commission charged could not exceed six-tenths per cent. The system developed and adopted in the Commonwealth, with the object of assisting farmers to make improvements or to develop or utilise the agricultural or pastoral resources of the land, is analogous. Particulars of advances made under the Closer Settlement and similar Acts are dealt with in the section on Closer Settlement. (See page 295.)

2. **Particulars of Transactions in each State, 1908 to 1912.**—The subjoined table gives particulars of transactions in each State in which advances to farmers are made, for the years 1908 to 1912 inclusive. Tasmanian figures are not available for 1908.

STATE GOVERNMENT ADVANCES DEPARTMENTS.—PARTICULARS OF LOANS TO FARMERS, 1908 to 1912*

State.	TOTAL ADVANCED TO DATE.					BALANCE DUE.				
	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£	£	£	£	£
N.S.W. † ...	789,333	1,062,625	1,362,853	1,617,192	1,948,885	423,511	591,292†	795,113†	928,086	1,074,358
Victoria ...	2,254,488	2,492,698	2,657,713	2,797,323	2,954,618	1,202,785	1,293,404†	1,308,425†	1,306,657†	1,343,834
Q'nsland ...	153,228	187,014	235,793	306,944	430,409	119,344	136,946	163,640	206,997	305,652
S. Aust. § ...	1,233,264	1,386,153	1,544,946	1,786,762	2,064,583	631,413	668,535	710,316	819,818	966,670
W. Aust. ...	743,598	1,004,675	1,257,082	1,540,241	1,946,184	610,202	835,239	935,960	976,811	1,280,732
Tasmania ...	...	5,687	9,187	14,610	18,636	...	5,657	8,521	13,561	16,592
C'wealth ...	5,173,911	6,138,852	7,067,574	8,063,072	9,363,326	2,987,255	3,531,073	3,921,975	4,251,930	4,987,838
	ANNUAL PROFITS.					ACCUMULATED PROFITS.				
	£	£	£	£	£	£	£	£	£	£
	†	†	†	†	†	†	†	†	†	†
N.S.W. † ...	+	4,661	5,390	8,200	9,543	+	6,583	8,039	15,606	25,349
Victoria ...	6,751	7,037	5,926	3,022	3,069	68,949	75,987	81,913	84,936||	88,006||
Q'nsland ...	1,326	1,405	1,974	2,548	3,318	2,623	4,028	6,003	8,551	11,869
S. Aust. § ...	3,797	4,218	4,587	6,662	6,289	29,380	33,598	38,186	44,848	51,137
W. Aust. ...	4,637	6,061	6,823	6,753	8,060	18,194	24,255	31,078	37,831	45,892
Tasmania ...	...	...	(—) 98	48	81	...	...	(—) 98	(—) 60	31
C'wealth ...	16,511	23,382	24,602	27,233	30,360	119,146	144,451	165,121	191,722	222,284

* Compiled from figures furnished by the Government Savings Bank of Victoria. † For years ended 31st December prior. ‡ Returns not available. § Balance after deduction of special principal payments in advances. || Includes loans to farmers and other producers and to local bodies on the security of their own rates. ¶ Including profits in connection with House and Shop loans.

3. **New South Wales.**—(i.) *Initial Legislation.* New South Wales adopted the principle of advances to settlers on 4th April, 1899, when the Advances to Settlers Act received assent. The objects of this Act were to authorise the raising of a loan for making temporary advances to settlers; to provide for the making and repayment of such advances; and for purposes incidental to, or consequent on, those objects. In order to provide the funds necessary for the carrying out of this Act, the Colonial Treasurer was authorised to sell inscribed stock, secured upon the Consolidated Revenue, to an amount not exceeding £500,000, to be sold in amounts of £10 or some multiple of £10 and bearing interest at the rate of 3½ per cent. per annum, payable half-yearly. A board, consisting of not more than three members, appointed by the Governor, called the Advances to Settlers Board, was appointed to deal with applications for loans and to decide whether they should be granted. The maximum amount that was authorised to be advanced to any one person was £200, and was to be repaid in full, together with interest at the rate of 4 per cent., within ten years of the making of the loan, but on no account was a loan to be granted except on the recommendation of the Board and when

the security given was deemed satisfactory. An Amendment Act was passed in 1902, by which the advance limit of £200 was increased to £500, and the period within which repayments were to be made was extended to thirty-one years. In the latter part of the same year a further Amendment Act came into force. Under the provisions of this Act the amount of inscribed stock was increased to £1,000,000, and the maximum amount of advance to any person was raised to £1500, interest on the latter being payable at the rate of not less than 4 per cent. per annum.

(ii.) *Legislation now in Force.* The above Acts were all repealed by the Government Savings Bank Act of 1906, which received assent on 21st December of that year. All property held by the Advances to Settlers Board was to be vested in three Commissioners appointed under this Act, who were styled "The Commissioners of the Government Savings Bank of New South Wales." An Advances Department of the Savings Bank was constituted, and debentures to the amount of £305,000 (that being the amount of stock issued under the Advances to Settlers Acts and held at the beginning of this Act) were issued, an equivalent amount of Government stock transferred to the Savings Bank Department being, at the same time, cancelled. All monies, securities, documents, property, etc., held by or on behalf of the Advances to Settlers Board were transferred to, and became vested in, the Commissioners, and were carried to the accounts of the Advances Department of the Savings Bank.

(iii.) *Security on which, and Objects for which, Advances are made.* The Commissioners are authorised to issue debentures to the amount of £2,000,000, bearing interest at a rate not exceeding 4 per cent. per annum. They may lend moneys from the Advances Department (a) upon mortgage of an estate of inheritance in fee simple in any land in the State; (b) upon mortgage of conditional purchases with or without associated conditional leases, homestead grants or selections, settlement leases or purchases, or conditional purchase leases; and (c) on deposit at call or short notice in the Treasury on any bank of issue in the State, or on deposit in the Savings Bank Department. Loans may be made for any of the following purposes:—(a) To pay off existing encumbrances or to purchase the land; (b) to pay off money to the Crown in respect of the land; (c) to make improvements or to develop the agricultural or horticultural resources of the land; and (d) to build homes on the land.

(iv.) *Amount and Repayment of Advances.* No loan to any one person may amount to less than £50 or more than £2000, and applications for loans not exceeding £500 have priority over those of a larger amount. In no case does the amount of the advance exceed 80 per cent. of the Commissioners' valuation of the security. Advances may be made up to two-thirds of the value of the interest of the borrower in the land, buildings and improvements, except where the land is held as a conditional lease, homestead grant, settlement lease, homestead selection, settlement purchase, or conditional purchase as to which the first five years' certificate has not issued, in which cases the amount advanced may not exceed one-half of the holder's interest in the improvements. Loans are made only in respect of first mortgages, and except in the case of loans on the security of freeholds or certificated conditional purchases, are repayable by equal half-yearly instalments within such period, not exceeding thirty-one years, as the Commissioners think fit. Loans granted on the security of freeholds and certificated conditional purchases are repayable either in the same manner as loans on other securities just mentioned, or at the expiration of a fixed term not exceeding five years, during which period interest only is payable.

(v.) *Advances on Purchases of Farms.* To facilitate close settlement on private estates suitable for the purpose, the Commissioners are authorised to make advances in order to assist persons in purchasing land. In the case of such advances the title to the land must be either freehold or a certificated conditional purchase, and the amount advanced may not exceed 80 per cent. of the Commissioners' valuation.

(vi.) *Particulars of Advances to Farmers, 1907 to 1911.* The following table shews particulars of the advances made up to the 31st December in 1907, 1908, 1909, 1910 and 1911:—

PARTICULARS OF GOVERNMENT ADVANCES TO FARMERS IN NEW SOUTH WALES, 1907 to 1911.*

Particulars.	1907.	1908.	1909.	1910.	1911.
Total applications received No.	12,397	13,796	15,497	16,861	18,479
Total amount applied for ... £	2,166,901	2,794,898	3,583,748	4,219,028	5,004,853
Total applications refused or withdrawn ... No.	5,541	5,632	6,256	6,725	7,200
Total applications approved No.	6,856	8,164	9,241	10,136	11,279
Total amount advanced ... £	789,333	1,062,625	1,362,853	1,617,192	1,948,885
Av. amount advanced per loan £	115	130	147	160	173
Repayments of principal ... £	365,823	470,548	566,102	689,106	874,527

* Year ended 31st December.

(vii.) *Closer Settlement Promotion Act 1910.* In 1910 an Act was passed whereby intending settlers might acquire by direct purchase from the owner, areas of private land suitable for closer settlement, under the same conditions, regarding residence, the payment of purchase money etc. as apply to settlement purchases under the Closer Settlement Acts. The purchasers are financed to the extent of 95 per cent. of the purchase money, provided that such does not exceed the bank's valuation of the properties. It is anticipated that a considerable amount of business will be done under this Act which will materially expand the operations of advances to farmers in this State. The following table will shew the business transacted up to the end of 1911:—

PARTICULARS OF TRANSACTIONS UNDER THE CLOSER SETTLEMENT PROMOTION ACT.

Applications.	Estates.	Farms.	Prices agreed upon by Vendors and Purchasers.
			£
Cases settled and surrender arranged ...	19	128	268,787
„ reported on but not yet settled ...	12	106	217,649
„ awaiting inspection and report ...	15	69	138,345
„ inspection not yet authorised ...	2	19	38,091
„ refused ...	13	82	122,735
Total cases submitted up to end of 1911 ...	61	404	785,607

4. *Victoria.*—(i.) *Legislation.* The Advances Department of the Government Savings Bank of Victoria was established by the Savings Bank Act of 1896, amended in 1901 and again in 1903. The funds for the purpose of making advances are raised by the issue of mortgage bonds, the total amount of which is limited to £3,000,000.

(ii.) *Security on which Advances are Granted.* In order to assist farmers, graziers, market gardeners, or other persons employed in agricultural, horticultural, viticultural, or pastoral pursuits, the Savings Bank Commissioners are empowered to make advances, either by instalments or otherwise, upon the security of any lands held by such person either (a) in fee simple, or (b) under a Crown lease in which the rent received is taken by the Crown in part payment of the lands demised. Security must be, in every case, a first mortgage. A loan may be either in cash or in mortgage bonds at par face value at the option of the Commissioners.

(iii.) *Amount of Advances.* The limits of the advances are £50 and £2000, as in New South Wales, applications for advances under £500 having also similar priority. In the case of land held in fee simple or under lease as specified in (b) above, the amount of the advance which may be made must not exceed two-thirds of the actual value of such land at the time of advance, which is reduced by the amount of all rent payable in respect of the land, previous to the issue of a Crown grant for such. If the person appointed by the Commissioners as valuator of any land certify that the improvements effected thereon increase the productive power of the land and exceed £2 per acre, the Commissioners may make, notwithstanding anything contained above, an advance of fifteen shillings for every acre so improved.

(iv.) *Special Provision for Vineyards, Orchards, etc.* In the case of land which has acquired a special value by reason of being cultivated as vineyards, hop-grounds, orchards, fruit-growing plantations, etc., advances may be made on the following terms:—(a) The total amount which may be at any time advanced upon any such land may not be more than £100,000 in the whole. (b) The amount of two-thirds of the actual value referred to above may be increased by one-quarter of any special increase in value, but such increase is in no case to be considered as greater than £30 an acre. (c) No advance may be for a longer period than fifteen years.

(v.) *Purposes for which Advances Granted.* Advances are made for the following purposes only:—(a) To pay off existing liabilities; (b) to pay off money owing to the Crown in respect of the land; (c) to make improvements or to improve and develop the agricultural, horticultural, viticultural, or pastoral resources of the land.

(vi.) *Repayment of Advances.* The rate of interest charged on loans, originally fixed at $4\frac{1}{2}$ per cent. per annum, may, by the Amendment Act of 1903, be altered by the Commissioners with the approval of the Governor-in-Council, up to but not beyond 5 per cent. per annum. All advances, together with interest, must be repaid by sixty-three half-yearly instalments, or such smaller number as may be agreed upon between the borrower and the Commissioners.

(vii.) *Particulars of Advances to Farmers, 1907 to 1912.* The following table gives particulars as to the loans raised and repaid by the Advances Department, the number and amount of applications received and granted, and the amounts advanced and repaid for each financial year from 1907-8 to 1911-12 inclusive:—

LOANS TO FARMERS.—TRANSACTIONS OF ADVANCES DEPARTMENT OF GOVERNMENT SAVINGS BANK, VICTORIA, DURING EACH FINANCIAL YEAR, 1907 to 1912.

Particulars.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.	Total to the 30th June, 1912.
Bonds & debentures issued £	200,000	200,000	200,000	700,000	500,000*	3,983,600*
„ „ redeemed £	79,500	30,000	125,025	100,000	109,925	1,883,700
Applications received No.	704	825	669	684	801	13,988
„ „ Amount, £	344,703	468,085	319,060	356,410	449,444	6,828,889
Applications granted No.	390	502	416	339	350	7,459
„ „ Amount, £	162,615	250,895	177,765	149,610	166,315	3,222,440†
Amounts advanced ... £	143,180	238,210	165,015	139,610	157,295	2,954,618
„ repaid £	168,800	151,437	153,355	156,817	120,118	1,610,784

* Including £277,658 not yet issued at end of financial year. † Of this amount £2,954,618 has been actually paid over to borrowers, a further sum of £27,450 being in course of settlement; the balance represents applications withdrawn or lapsed, or amounts offered but not accepted.

The number of loans at the 30th June, 1911, was 3139, and the average balance of each loan was £428 2s. 2d. The number of repayments by farmers which became due during the year 1911-12 was 7010, representing amounts of £58,845 for interest and

£29,857 for principal. These instalments have been well met, and on 30th June, 1912, there were only ten farmers in arrear, the principal in arrear amounting to £30, and interest to £66.

5. **Queensland.**—(i.) *Legislation.* The Queensland Government was authorised, under the Agricultural Bank Act of 1901, to establish a bank for the purpose of promoting the occupation, cultivation, and improvement of the agricultural lands of the State, and a body of three trustees was appointed to administer the Act. The Government was empowered to raise a sum not exceeding £250,000 by the issue of debentures, bearing interest at a rate of not more than 4 per cent. The original Act was amended in 1904 and again in 1905, the latter amendment specifying that no advance be made to any alien. A further Act "The Agricultural Bank Act (consolidated) of 1911," provided for the appointment of a managing director and two trustees in lieu of three trustees as formerly.

(ii.) *Security on which and Purposes for which Advances are made.* Advances may be made to owners of agricultural lands or to occupiers of Crown lands held either as agricultural farms or homesteads, grazing farms or homesteads, unconditional selections, or miners' homestead leases, and may be for any of the following purposes:—(a) The payment of existing liabilities; (b) agricultural, dairying, horticultural, or viticultural pursuits on the holding; (c) making improvements or adding to improvements already made; (d) the purchase of stock, machinery, or implements. Advances are only made on the security of first mortgages.

(iii.) *Amount and Repayment of Advances.* No advance may exceed ten shillings in the pound of the fair estimated value of the holding in the cases of (a) and (b) above, while in the other cases the limit of the amount of the advance is twelve shillings in the pound of such value, and the advance at any time must not exceed £800. Applications for amounts not larger than £200 have priority over those for a larger amount. During the first five years following the date of the loan the borrower must pay interest at the rate of 5 per cent. per annum. After the expiration of that period the loan, together with the interest, must be repaid by half-yearly instalments within twenty years, the amount of such half-yearly instalment being £4 Os. 3d. for each £100 advanced. In the case of advances for the purposes of paying off existing liabilities or of buying stock, machinery, or implements, the loan must be repaid by equal half-yearly instalments of the amount of £3 11s. for every £100 advanced within twenty-five years from the date of its granting.

(iv.) *Transactions of Agricultural Bank, 1908 to 1912.* The subjoined table shews particulars of the transactions of the Agricultural Bank for each year ended 30th June, from 1908 to 1912 inclusive:—

**PARTICULARS OF TRANSACTIONS OF THE AGRICULTURAL BANK, QUEENSLAND,
DURING EACH FINANCIAL YEAR, 1907-8 TO 1911-12.**

Particulars.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
Applications received ... No.	512	586	746	1,101	1,712
" " Amount, £	70,107	92,363	114,901	165,562	353,893
Applications granted ... No.	319	430	680	905	1,417
" " Amount, £	36,706	50,113	79,518	114,606	222,967
Amounts advanced ... £	23,868	33,786	48,245	71,150	123,476
" repaid ... £	16,740	16,184	21,551	27,793	24,821
" outstanding to date £	119,344	136,947	163,641	206,998	305,652

6. **South Australia.**—(i.) *Legislation.* Under the State Advances Act of 1895, amended in 1896 and 1901, a State Bank has been established in South Australia for the purpose of making advances (i.) to farmers and other producers, (ii.) in aid of industries on the security of lands held in fee simple or under Crown leases, and (iii.) to local authorities upon the security of their rates. The bank, managed by a board consisting of five trustees appointed by the Governor, has funds raised by the issue of mortgage bonds, carrying interest at a rate not exceeding 4 per cent., to an amount not greater than the total amount due to the bank for State advances, and in any case not greater than £3,000,000. On 23rd December, 1908, the Advances to Settlers on Crown Lands Act was passed. This measure is referred to in (iv.) below. Several Acts have, from time to time, been passed dealing with seed wheat advances.

(ii.) *Amount and Repayment of Advances.* No advance to farmers or to other producers, or in aid of any industry, may exceed three-fifths of the unimproved value of the fee simple of the land and permanent improvements thereon, and if the land has acquired a special additional value by reason of cultivation as a vineyard or orchard, *plus* one-third of such special additional value. If the advance be on the security of a Crown lease, the amount of the loan may not exceed one-half the selling value of the lease, including the interest of the holder in any improvements on the land. The amount lent to any one person at any time may not exceed £5000. Advances are repayable by half-yearly instalments, the rate of interest, up to the limit of 5 per cent. per annum, being a matter of arrangement between the bank and the borrower.

(iii.) *Transactions of the State Bank, 1908 to 1912.* In addition to assisting farmers and other producers, the State Bank makes, as mentioned above, advances in aid of industries and also to local authorities. The following table shews particulars of the transactions with farmers of the State Bank for each year from 1908 to 1912 inclusive:—

SOUTH AUSTRALIA.—PARTICULARS OF TRANSACTIONS OF THE STATE BANK
FOR EACH YEAR ENDED 31ST MARCH, 1908 TO 1912.

Particulars.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
Loans raised £	64,180	138,700	57,089	49,279	88,850
„ repaid £	53,015	123,600	4,056	3,146	39,820
Applications received ... No.	250	796	301	399	375
„ „ Amount, £	138,466	348,777	192,619	300,098	400,181
Applications granted ... No.	210	718	234	190	145
„ „ Amount, £	93,177	224,820	79,037	127,729	134,421
Amounts advanced ... £	76,092	166,752	71,870	91,405	132,402
„ repaid £	50,727	105,501	52,960	50,014	38,638
„ outstanding to date £	381,316	442,567	461,477	502,868	596,632

(iv.) *The Advances to Settlers on Crown Lands Acts 1908 and 1909.* Under the 1908 Act a Board, called the Advances to Settlers Board, was created. The Treasurer is authorised to set apart a sum not exceeding £200,000 in any one financial year for the purpose of loans to settlers. The maximum amount which may be advanced to any one settler is £600, and for a period of five years following the date on which the advance is made the settler is required to pay interest at the rate of 5 per cent. per annum, payable half-yearly. At the expiration of that period it is provided that he must repay the amount advanced by fifty equal half-yearly instalments, together with interest at 5 per cent. on the balance outstanding. A rebate of 1 per cent. interest is allowed if the half-yearly payment is made within fourteen days of the date on which it falls due. Advances may be made on prescribed security for the purpose of making improvements on a holding, such as ring-barking, clearing, boring for water, etc.; or for discharging a mortgage existing on a holding; or for stocking a holding, provided that the necessary improvements

have been made on the land. The amount of the advance may not exceed a sum equal to fifteen shillings in the pound on the value of improvements already made, and may not exceed twelve shillings in the pound on improvements made if the land be mortgaged.

For the year 1909-10, the number of applications for advances was 102, aggregating £19,577, and fifty-five, totalling £9418, were approved of. As, however, some of these were granted by instalments, the actual amount advanced was £8087. During 1910-11, there were 109 applications received, aggregating £21,996; of these, 82, amounting to £15,131 were granted, of which amount £12,747 was advanced by the close of the year. During 1911-12, 546 applications amounting to £87,534 were received, of which 285, amounting to £56,044, were granted, the total advanced during the year being £65,916, and the amount repaid £2844. On the 30th June, 1912, the sum of £82,094 represented the amount of advances outstanding.

7. Western Australia.—(i.) *Legislation.* By the Agricultural Bank Act of 1894 the Governor of Western Australia was empowered to establish a bank for the purpose of promoting the occupation, cultivation, and improvement of the agricultural lands of the State. This Act was amended from time to time until a consolidating Act was passed in the year 1906 repealing all previous enactments on the subject. Under this last Act the bank was placed under the control of three trustees, appointed by the Governor, in whom is vested the whole of the bank property. The necessary funds are provided for by the issue of mortgage bonds bearing interest at a rate not exceeding 4 per cent. per annum. The amount authorised to be raised was £1,000,000, but by Amending Acts in 1907, 1909, 1910, and 1911 the amount was raised successively to the present total of £3,000,000.

(ii.) *Purposes for which Advances may be made.* The bank is authorised to make advances for (a) ring-barking, clearing, fencing, draining, or water conservation; (b) for discharging any existing mortgage; (c) for the purchase of stock for breeding purposes; or (d) for the purchase of agricultural machinery manufactured in Western Australia subject to the employees engaged in the manufacture of such machinery being paid the ruling rate of wages.

(iii.) *Amount of Advances.* Advances may be made to an amount not exceeding £400 up to the full value of the improvements proposed to be made. Further advances may be made to an amount not exceeding £250 up to half the value of additional improvements proposed to be made. No advance, however, for the purpose of discharging existing mortgages may be made to an amount exceeding three-quarters of the value of improvements already made, and the total advances to any one person may not at any time exceed £750. Not more than £100 may be advanced to any person for the purpose of purchasing stock or agricultural machinery. Advances are made only on a first mortgage, but a second mortgage may be taken as a collateral security. When any land is held by two or more persons as joint proprietors, the amount to be advanced may be multiplied by the number of such joint proprietors.

(iv.) *Repayment of Advances.* During the five years following the date of the loan the borrower pays interest only, at the rate of 5 per cent. per annum. After the expiration of that period the amount advanced, with interest at 5 per cent., must be repaid within twenty-five years by equal half-yearly instalments. In the case of advances for the purpose of buying stock the bank fixes the time and manner of repayment.

(v.) *Particulars of Transactions of Agricultural Bank, 1908 to 1912.* The following table gives particulars of transactions of the Agricultural Bank for each year from 1908 to 1912 inclusive :—

PARTICULARS OF TRANSACTIONS OF AGRICULTURAL BANK, 1908 to 1912.

AMOUNTS ADVANCED FOR WHICH IMPROVEMENTS HAVE BEEN EFFECTED.

Year ended the 30th June.	Amounts Advanced to Date.	Improvements Effected to Date.							Total.
		Clearing.	Cultivating.	Ring-barking.	Fencing.	Drain-ing.	Wells and Reser-voirs.	Build-ings	
	£	£	£	£	£	£	£	£	£
1908	743,599	643,341	120,688*	44,363	98,663	4,127	34,789	82,325	1,028,296
1909	1,004,675	780,907	124,338*	62,711	177,410	4,675	48,543	83,708	1,282,292
1910	1,257,082	899,712	124,782*	81,042	240,729	5,043	61,387	83,868	1,496,563
1911	1,540,241	1,031,891†	124,812*	107,676	297,077	5,386	78,581	83,868	1,729,291
1912	1,946,184	1,194,750†	124,782*	149,043	361,637	5,660	103,519	83,868	2,023,259

* Including £4321 for orchards.

† Including £6300 in 1910, £8611 in 1911, and £12,180 in 1912 for poison and blackboy grubbing.

The following table gives particulars as to the amount of loans raised and repaid, the number and amount of applications received and granted, and the amounts lent and repaid for each financial year from 1907-8 to 1911-12 inclusive :—

WESTERN AUSTRALIA.—PARTICULARS OF TRANSACTIONS OF THE AGRICULTURAL BANK FOR EACH FINANCIAL YEAR, 1907-8 to 1911-12.

Particulars.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
Applications received ... No.	2,598	2,915	2,593	2,839	3,933
" " Amount, £	368,710	433,575	439,425	534,650	867,300
Applications granted ... No.	2,453	2,628	2,502	2,636	3,392
" " Amount, £	308,700	347,525	392,650	468,200	649,030
Amounts advanced ... £	218,421	261,077	252,407	283,159	405,943
" repaid ... £	28,754	36,040	151,686	242,307	102,023
" outstanding to date £	610,202	835,239	935,960	976,812	1,280,732

8. *Tasmania.*—(i.) *Legislation.* Under the State Advances Act 1907, assented to 22nd November of that year, authority is given to make advances to persons holding land on credit purchase. Three persons called "the Trustees of the Agricultural Bank of Tasmania" have power to administer the provisions of the Act. Funds were raised by the issue of debentures or inscribed stock for a sum not exceeding £50,000, interest at 4 per cent. per annum being payable on same.

(ii.) *Purposes for which Advances may be made.* Loans may be granted for any of the following purposes:—(a) payment of liabilities already existing on the holding; (b) carrying on agricultural, dairying, grazing, or horticultural pursuits; (c) making or adding to improvements.

(iii.) *Amount of Loans.* The minimum amount of any loan is £25, and the maximum £500. No advance may exceed one-half of the amount actually paid to the Crown in respect of the land held by the borrower under purchase upon the credit system, plus one-half of the present value of any improvements upon such land.

(iv.) *Repayment of Loans.* Interest at the rate of 6 per cent. per annum is payable on all advances made. After five years the borrower must begin to pay off the principal in fifty half-yearly instalments, but the advance may, at the option of the borrower, be repaid at any time sooner than is provided, and in larger instalments.

(v.) *Particulars of the operations of the Agricultural Bank.* During the eighteen months ended 30th June, 1909, seventy-seven applications for advances were made, which, with forty-nine carried over from the previous year, made a total of 126 applications, representing £11,110. Of these, ninety-four, of a value of £6571, were granted, the amount advanced being £5687. The amount repaid during the period was £30, leaving a balance of £5657 outstanding. For the year 1909-10, the number of applications for loans was eighty-two, totalling £5845. The trustees of the bank approved of sixty-one of these, amounting to £3593, and refused eleven, representing a value of £850, owing to the applicants not being entitled to loans in accordance with the Act. During the year one borrower failed to comply with the requirements of his mortgage deed and his selection was sold.

During 1910-11, ninety applications for loans totalling £7393 were received. Of these, 71, amounting to £5448, were approved and five were not entertained; the remainder were awaiting consideration of the trustees at the end of the year. The sum of £5423 was actually paid to borrowers during the year. Sixty-four applications for loans totalling £4496 were received during 1911-12. Of these, 52 amounting to £3241 were approved. The amount advanced was £4026, making the total amount advanced under the Act to 30th June, 1912, £18,636, of which £2044 had been repaid, leaving a balance outstanding of £16,592.

§ 22. Graphical Representation of Crops.

1. *Areas of Principal Crops.*—A graphical representation of the areas in the Commonwealth devoted to each of the leading crops from 1860 to the present time is furnished on page 427.

(i.) *Wheat.* In the case of wheat, the Commonwealth's principal crop, the graph indicates that the fifty-two seasons under review divide themselves naturally into five distinct periods, three of moderate and fluctuating increases, and two of extremely rapid increases. Thus, between the seasons 1860-1 and 1875-6, a moderate rate of increase was in evidence, the area increasing from 640,000 to 1,420,000 acres. During the five succeeding seasons a very rapid increase took place, the total in 1880-1 amounting to over 3,000,000 acres. For fifteen years thereafter the increase in area was not large, and in two seasons, viz., 1885-6 and 1890-1, marked decreases were experienced. The total increase for the fifteen years was about 700,000 acres, the total for 1895-6 being rather more than 3,750,000 acres. The succeeding five years witnessed a rapid increase in area to a total of more than 5,600,000 acres, followed by a further period of marked fluctuations; this latter period, however, contained the three seasons of maximum wheat-cropping, viz., that of 1909-10, when an area of 6,586,000 acres was so cropped, that of 1910-11, when the area amounted to 7,372,456 acres, and that of 1911-12, when 7,427,834 acres was cropped.

(ii.) *Hay.* Hay-growing, which, next to the growing of wheat for grain, is the most important branch of agriculture in the Commonwealth, will be seen from the graph to have fluctuated very considerably from year to year during the period under review, these fluctuations being due in the main to seasonal variations and to variations in the relative prices of grain and hay crops. It will be seen that the features of the graphs are a moderate increase from 1860-1 to 1875-6, a fairly rapid increase from 1875-6 to 1882-3, moderate increase thence to 1896-7, succeeded by marked fluctuations from this point onwards with, on the whole, a moderate rate of increase until 1908-9 when 2,453,000 acres was attained, succeeded by a decline in 1909-10 to 2,228,000 acres, and a slight increase in 1910-11 to 2,258,000 acres, and a substantial increase in 1911-12, when the maximum of 2,518,000 was attained.

(iii.) *Oats*. The graph relating to oats exhibits extremely marked fluctuations from year to year in the area devoted to this crop, the general tendency, however, being one of increase, especially during the period 1892-3 to 1896-7. During the four seasons following 1905-6 the area under oats has increased rapidly to a maximum of 698,000 acres in 1909-10, the succeeding two years experiencing a slight falling off, when areas of 677,000 and 617,000 acres were so cropped during 1910-11 and 1911-12 respectively.

(iv.) *Maize*. The graph relating to maize indicates that the area devoted thereto in Australia, although somewhat fluctuating, increased with fair rapidity until the season 1896-7, since when it has varied above and below the point then reached, on the whole remaining practically stationary up to 1909-10. The maximum area under maize, prior to 1910-11, viz., 372,000 acres, was attained in the season 1903-4; in 1910-11 this record was exceeded by 43,000 acres; a falling off occurred in 1911-12, when the area under crop was 340,000 acres.

(v.) *Sugar-Cane*. In the case of sugar-cane the graph shews a fairly rapid rate of increase to 1874-5, followed by a period of five years during which the area increased but slowly. From 1879-80, however, the sugar-cane area rose rapidly until in 1884-5 a total of more than 75,000 acres was reached. Then followed a period of diminished cultivation, and it was not until 1892-3 that so high a total was again attained. After this the area rose rapidly to 136,000 acres in 1898-9, but during the next five years a decline took place, the area for 1903-4 being 132,000 acres. The season of maximum area, viz., 156,000 acres, was 1905-6. A marked decline in area was in evidence during the four following seasons; in the year 1910-11, however, the former maximum was again attained, but this was followed by a slight falling off in 1911-12 to the extent of 11,000 acres.

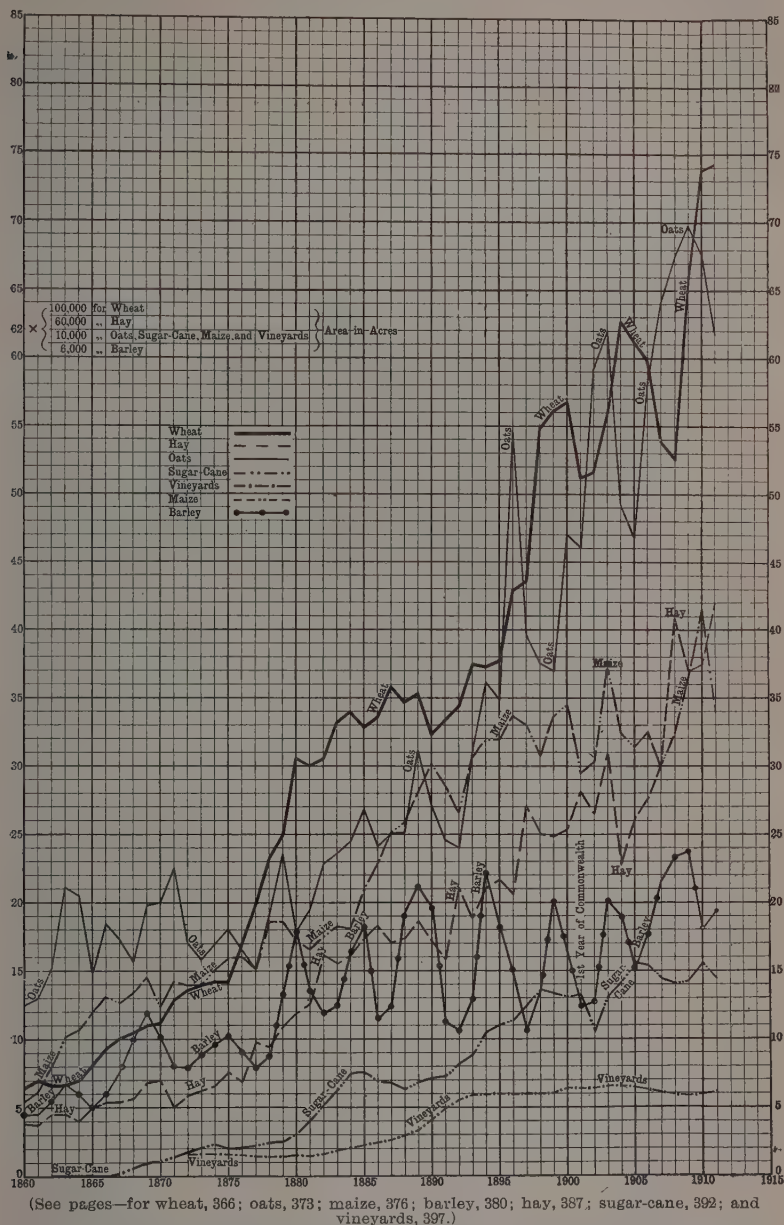
(vi.) *Barley*. The Commonwealth barley crop has exhibited from time to time very marked fluctuations in area. The graph representing this crop shews consequently a very irregular line. The total has, on the whole, increased but slightly since 1880, rapid increases in certain years being succeeded by equally rapid decreases in subsequent years. The maximum area under barley, viz., 143,000 acres, was attained in the season 1909-10.

(vii.) *Vines*. The graph relating to area under vines, from 1872-3 onwards, indicates that there were two periods of very slow increase, one from 1872-3 to 1881-2, the other from 1893-4 to 1904-5. Between these, viz., from 1881-2 to 1893-4, a moderate rate of increase of area was experienced, the total for the Commonwealth advancing during that time from 14,600 acres to 57,400 acres, while since 1904-5 the area has fluctuated considerably, the general tendency evidencing a fairly consistent diminution. The season of maximum area under vineyards was 1904-5, with a total of about 65,700 acres.

2. Production.—The diagram on page 428 furnishes a graphical representation of the aggregate yields from 1860-1 to 1911-12 of five of the principal crops of the Commonwealth.

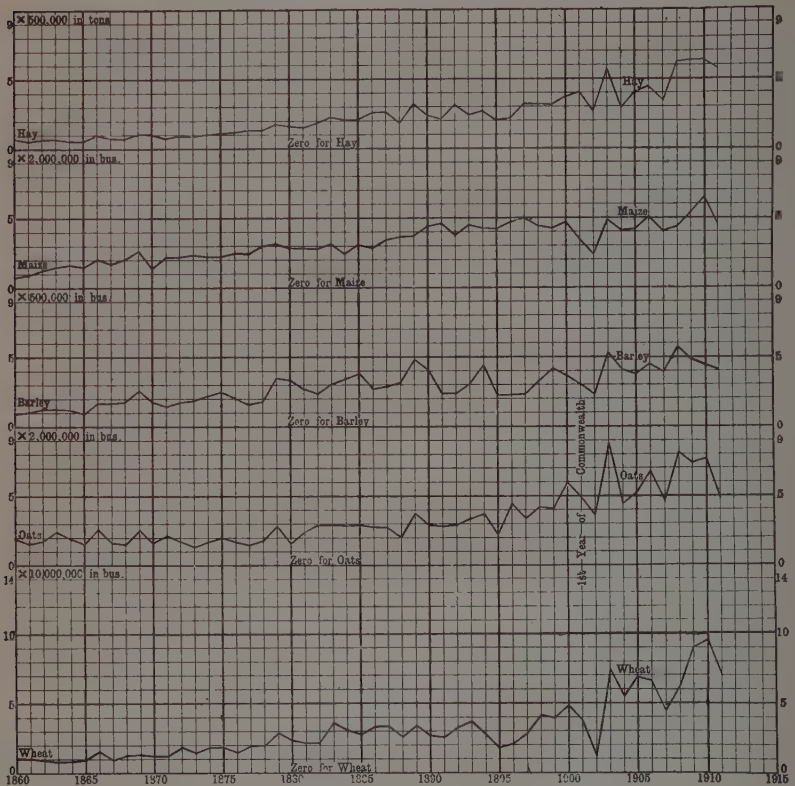
(i.) *Wheat*. This graph brings out clearly the fact that while on the whole the production of wheat in the Commonwealth is increasing with fair rapidity, the fluctuations in the total quantity produced have been more marked in recent than in earlier years. Thus since the year 1890 there have been three seasons of extremely low output, viz., in 1891-2, 1895-6, and 1902-3, with aggregate yields respectively of 25,700,000 bushels, 18,300,000 bushels, and 12,400,000 bushels. On the other hand there have been five seasons in which the total production was exceptionally high. These will be seen from the graph to have been the seasons 1893-4, 1900-1, 1903-4, 1909-10 and 1910-11, the

GRAPHS SHEWING THE AREA UNDER THE PRINCIPAL CROPS IN THE COMMON-WEALTH FROM 1860-1 TO 1910-11.



EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year, while the vertical height represents a number of acres, varying with the nature of the crop in accordance with the scale given on the left-hand of the diagram. The height of each graph above the base line denotes, for the crop to which it relates, the total area under cultivation in the Commonwealth during the successive seasons.

GRAPHS SHEWING THE PRODUCTION OF THE PRINCIPAL CROPS IN THE COMMONWEALTH FROM 1860-1 TO 1910-11.



(See pages—for wheat, 367; oats, 373; maize, 377; barley, 380; and hay, 389.)

EXPLANATION OF GRAPHS.—In this diagram a separate base line is provided for each of the crops dealt with. In each instance the base of a small square represents an interval of one year, the vertical height of such square representing in the case of the wheat graph, 10,000,000 bushels; oats, 2,000,000 bushels; barley, 500,000 bushels; maize, 2,000,000 bushels; and hay, 500,000 tons. The height of each graph above its base line denotes the aggregate yield in the Commonwealth of that particular crop during the successive seasons.

total yields for which were 37,100,000 bushels, 48,400,000 bushels, 74,100,000 bushels, 90,400,000 bushels, and 95,100,000 bushels respectively. Each of these yields represented at the date of its attainment the maximum Australian wheat crop, the last-mentioned being the highest yet reached.

(ii.) *Oats*. From 1860-1 to 1880-1 the oat crop of the Commonwealth, although exhibiting from year to year fluctuations more or less marked, gave no indications of a tendency to increase with the advance in population. This is well shewn in the diagram, by the persistence with which the graph for this period adheres to the line denoting 4,000,000 bushels, the yield for 1880-1 being actually lower than that for 1860-1. From this latter season to 1894-5 the variation was on a somewhat higher level, and is shewn in the diagram to have been in the vicinity of the line representing 6,000,000 bushels. From this point onwards a tendency to more rapid increase in production is in evidence, obscured somewhat by extensive fluctuations corresponding to those referred to above in the case of wheat. Thus in 1895-6 and 1902-3 the total yields were only 4,400,000 and 7,300,000 bushels respectively, while in 1900-1 and 1903-4 aggregates respectively of 12,000,000 and 17,500,000 bushels were reached, this latter being the maximum oat crop of the Commonwealth. The 1911-12 crop was the lowest for four seasons.

(iii.) *Barley*. The Australian barley crop will be seen from the graph to have fluctuated very considerably throughout, these variations being due rather to fluctuations in the area sown than to adverse seasons. From 1879-80 to 1902-3 the curve rises above and falls below the line representing 1,500,000 bushels. For more recent years the graph bears the evidence of an increasing, though still fluctuating, output. The maximum barley crop of the Commonwealth was that of 2,870,000 bushels in 1908-9.

(iv.) *Maize*. The maize graph indicates a rapid increase in output from 1860-1 to 1869-70, followed by a moderate increase from the latter season to 1886-7, and a further rapid increase to 1891-2. From the last-mentioned season onwards the production has fluctuated considerably, but little increase has, on the whole, been experienced, the total for 1891-2 being 9,262,000 bushels, as compared with 10,771,000 bushels for 1909-10, the maximum Australian maize crop up to that date; this was exceeded in the following season, when the production of maize amounted to 13,044,000 bushels. As in the case of all other crops, the maize yield for 1911-12 was considerably lower than that for the year immediately preceding it.

(v.) *Hay*. The graph relating to the Commonwealth output of hay indicated a fairly continuous increase in production from the season 1860-1, when the total stood at 340,000 tons, to that of 1887-8, when it reached 1,330,000 tons. In subsequent years marked fluctuations have been in evidence, but the tendency has, on the whole, been one of increase. The maximum hay crop of the Commonwealth was that of the season 1910-11, when the total production reached 3,176,000 tons.

SECTION IX.

FARMYARD AND DAIRY PRODUCTION.

● § 1. Introductory.

1. **General.**—Amongst the live stock brought out by Captain Phillip in 1788 were included one bull, four cows, one calf, and twelve pigs, these being established at Farm Cove when Port Jackson was settled. Of the early importations of cattle the greater part was slaughtered to relieve the necessity of the colonists in the famines which several times threatened the existence of the young community. It may be noted that the existing herds have not sprung from the original stock only, but have been improved by the introduction of stud cattle and pigs, especially during late years. Stock-raising, with regard to the special requirements of dairying, etc., has in fact been scientifically considered only in comparatively recent times. The technical advances made in the manufacture of butter and cheese in Europe and elsewhere, and the necessity for keeping pace with them in connection with the export trade of Australia, demanded in Australian stock-raising a judicious crossing of strains with a view to improving the quantity and quality of the milk supply. Further, the pasturage was improved by the eradication of grasses and herbage of little or no use, and the planting of suitable grasses and other fodder plants. Much of the indigenous herbage forms, however, excellent food for stock. Although some of the State Governments have made considerable importations for stud purposes, the importation of British and other cattle for breeding, is ordinarily under private enterprise, but is safeguarded by Government supervision in order to prevent the introduction of diseases and pests, with the result that Australia is comparatively free from stock diseases. Permanent structures for the shelter of dairy herds are required only to a very small extent in the Commonwealth, the mildness of the climate rendering it possible for stock to thrive in the open throughout the year. Practical experience has, however, demonstrated the wisdom of rugging or otherwise protecting dairy cattle during the colder months, while the provision of shelters in the form of plantations of trees is attended by beneficial results. Where winter fodder must be grown it is given to the cattle in the fields, and consists of lucerne, oats, maize, barley, rye, and mangolds. Ensilage is highly recommended by dairy experts, and increasing use is being made thereof. Continued expansion of the dairying industry, and particularly its extension into non-coastal districts, will involve a more general use of the silo.

Some of the indigenous Australian grasses are particularly suitable for dairy cattle, since they possess milk-producing as well as fattening properties, but many of the holdings are sown with English and other imported grasses, varieties being chosen to suit particular localities. The area of land devoted to green food and permanent artificially-sown grasses is constantly increasing, its produce being, for the most part, devoted to the depasturing of dairy herds. The opinion, long held, that only heavily-grassed country with good rainfall was profitable for dairying has been controverted by experience, it having been shown that with proper care more lightly clad regions can be made to yield good milk results.

2. **State Supervision of Industry.**—Each of the State Agricultural Departments exercises considerable supervision in regard to the industry. Dairy experts are employed to give instruction in approved methods of production, to examine animals, to inspect

the buildings used for milking, separating and butter-making, and to examine the marketable produce. A high standard of dairy hygiene, cleanliness of *personnel* and *matériel*, and purity of produce have also been insisted upon under State laws. Financial assistance has been given to facilitate the economic handling of dairy products, and much benefit has resulted, the advances generally having been promptly repaid.

For the maintenance of the purity and quality of Australian butter, the Commonwealth regulations under the Commerce Act 1905 enact that butter intended for shipment overseas must be covered with a true trade description, and that at least the following matter should appear in the brand:—The word "Australia," the name of the State in which it was produced, net weight, manufacturer's or exporter's name or registered brand, and the words, "pure creamery butter," "pastry butter," "milled butter" (that is, butter which is a mixture or blend of two or more butters ordinarily packed alone and under separate names or brands), or "re-packed butter," as the case may require. Other matter may be added, but it must be true, and not liable to mislead. Margarine must be so stamped or marked. All butter, etc., intended for export must be sent for inspection to appointed places. The regulations now in force contain important provisions in regard to the standard for export dairy products. By means of these provisions purity and quality are guaranteed. On the request of exporters, butter and cheese are graded and marked as to their quality, and in such cases the inspecting officer issues a certificate on the authorised form. Trade is thereby facilitated, since quantities of butter, etc., can be purchased solely on the certificate issued, without inspection. The standards are as follow:—

Butter.—Butter which contains only—No fat other than butter fat; not more than 16 per cent. of water, 3 per cent. of casein; 0.5 per cent. of boric acid, 4 per cent. of salt; not less than 82 per cent. of butter fat; any colouring matter deemed by the Minister to be harmless.

Cheese.—Cheese which does not contain any foreign matter other than rennet, salt, or colouring matter deemed by the Minister to be harmless.

Concentrated Milk.—Pasteurised milk which is concentrated by any process whatever, and not subsequently sterilised, and which contains not less than 9 per cent. of butter fat and 24 per cent. of milk solids not fat, and no foreign substance other than 0.5 per cent. of boric acid.

Condensed Milk.—Milk which is condensed or concentrated by any process whatever, with or without the addition of cane sugar, and which, when containing such sugar, also contains not less than 9 per cent. of butter fat, and 22 per cent. of milk solids not fat, or which, when not containing such sugar, contains not less than 8 per cent. of butter fat and 20 per cent. of milk solids not fat.

Dried Milk.—Milk from which the water has been removed by a process of heating, without the addition of any extraneous matter, and which, when dissolved in or treated with water, according to any directions supplied by the maker or vendor thereof, produces milk as defined in this Schedule.

Honey.—The ripened, unfermented honey of bees, which does not contain any foreign matter.

Milk.—The milk of cows, whether mixed or not, and containing not less than 3 per cent. of butter fat, nor less than 8.5 per cent. solids not butter fat.

The trade description prescribed must be permanently affixed on the goods or on the containing packages. In the case of butter the trade description must, with additional particulars, be indelibly impressed on the outer covering.

When, upon request by exporters, butter and cheese are graded by the examining officer, the points awarded are as follows:—

BUTTER.—

- Superfine—Pure creamery butter, graded at 95 to 100 points.
- First grade—Pure creamery butter, graded at 90 to 94 points.
- Second grade—Pure butter, graded at 83 to 89 points.
- Third grade—Pure butter, graded at 75 to 82 points.
- Pastry butter—Pure butter, graded at less than 75 points.

CHEESE.—

- Superfine—Pure cheese, graded at 95 to 100 points.
- First grade—Pure cheese, graded at 90 to 94 points.
- Second grade—Pure cheese, graded at 83 to 89 points.
- Third grade—Pure cheese, graded at 75 to 82 points.

In grading butter and cheese, the maximum points to be awarded are: Flavour and aroma, 50 points; texture, including body, grain, and moisture, 30 points; condition, including colour, salting, packing, and covering, 20 points. An official grade mark is to be applied to all export butter and cheese graded at over 89 or under 75 points, as follows:—

- Butter and cheese graded at 95 to 100 points—Superfine.
- Butter and cheese graded at 90 to 94 points—First grade.
- Butter graded at under 75 points—Pastry.
- Cheese graded at under 75 points—Below standard.

Impure butter and cheese are not graded at all. The exportation of unsound, inferior, or abnormal dairy products is prohibited, unless the trade description applied to the goods includes the words, "Below Standard."

3. Mixed Farming.—Dairying is not now, as formerly, wholly confined to farmers, since many graziers in a large way of business have lately given it their attention. In non-coastal regions it is generally carried on in conjunction with agriculture and sheep-raising, sufficient fodder being grown to carry the cattle through the winter months. Local wants are thus met, and in many places remote from the metropolis well-equipped factories have been established.

4. Factory System.—Cream separation and butter-making are often carried on together under the co-operative system. The creation of large central butter factories, supplied by numerous separating establishments or "creameries," has resulted in a considerable reduction in the cost of manufacture, since improved appliances, such as refrigerators, may be profitably worked at the larger establishments. The product is also of a more uniform quality. The number of farmers who adhere to hand processes is rapidly diminishing. Formerly the average quantity of milk used per pound of hand-made butter was about 3 gallons, but separator butter requires only about 2½ gallons.

5. Butter and Cheese Factories.—The establishments in the Commonwealth where the manufacture of butter, cheese, and condensed milk was carried on, numbered 540 in 1911. These were distributed as regards the various States as follows:—New South Wales, 180; Victoria, 199; Queensland, 83; South Australia, 46; Western Australia, 3; Tasmania, 29.

§ 2. Milk, Butter, and Cheese.

1. **Dairy Herds.**—Since the drought year 1902 there has been in each State a general yearly increase in the number of dairy cows. In New South Wales, Victoria, South Australia proper, and Tasmania—as will be seen from the table of cattle and dairy cattle given below—the proportion of dairy cattle to all cattle is high. In Queensland, the Northern Territory, and Western Australia there is a greatly preponderating number of other cattle, dairying not being firmly established in the tropical regions of the Continent. In southern Queensland, however, the industry has developed remarkably during the last decade. In the tables which follow in this section the returns for the Northern Territory and the Federal Capital Territory are, unless shewn separately, included in South Australia and New South Wales respectively, the dairy products from the newly-acquired Commonwealth territories being small:—

CATTLE AND DAIRY CATTLE, COMMONWEALTH, 1907 to 1911.

State.		1907.	1908.	1909.	1910.	1911.
New South Wales	All Cattle	2,751,193	2,955,934	3,027,727	3,140,307	3,185,824
	Dairy Cows	713,323	736,693	755,879	826,443	855,926
Victoria	All Cattle	1,842,807	1,574,162	1,549,640	1,547,569	1,647,127
	Dairy Cows	709,279	609,166	625,063	668,777	699,555
Queensland	All Cattle	3,892,232	4,321,600	4,711,782	5,181,699	5,073,201
	Dairy Cows	282,883	304,281	333,839	365,444	357,095
South Australia	All Cattle	334,671	340,376	344,034	384,862	393,566
	Dairy Cows	100,743	106,269	110,757	119,628	121,803
Western Australia	All Cattle	717,377	741,788	793,217	825,040	843,638
	Dairy Cows	31,489	31,522	29,176	30,785	27,740
Tasmania	All Cattle	215,523	205,827	199,945	201,854	217,406
	Dairy Cows	54,245	50,931	50,996	52,966	56,858
Northern Territory	All Cattle	374,683	407,392	414,046	513,383	459,780
	Dairy Cows	489	546	464	556	490
Fed. Capital Territory	All Cattle	*	*	*	*	8,412
	Dairy Cows	*	*	*	*	1,192
Commonwealth	All Cattle	10,128,486	10,547,679	11,040,391	11,744,714	11,828,954
	Dairy Cows	1,892,351	1,889,398	1,906,174	2,064,599	2,120,659

* Included under New South Wales.

2. **Milk.**—The annual quantity of milk produced per dairy cow varies greatly with locality and season, probably reaching as high as 500 gallons, but averaging for the whole of Australia, for all dairy cows and for all seasons, something under 300 gallons per annum. The best yields over a series of years appear to be in Victoria, South Australia, New South Wales, and Tasmania, while Western Australia is below Queensland. In the following table the average yields per cow for 1908, 1909, 1910 and 1911 are taken from the number of dairy cows which were, during any part of the year, milking. The average given is considerably below that for cows which were yielding during the greater part of the year. It will be seen that the highest averages obtain in those States which have adopted more scientific methods of dairying, such as systematic breeding, culling of herds, milk testing, etc.

PRODUCTION OF MILK, COMMONWEALTH, 1908, 1909, 1910 and 1911.

Heading.	N.S.W.*	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1908—							
Dairy cows ... No.	736,683	609,166	304,281	106,815	31,522	50,931	1,839,396
Production of milk gals.	188,518,562	148,122,200	63,934,402	28,883,000	4,531,212	13,520,000†	447,509,376
Aver. yield per cow gals.	257	243	210	270	144	265	243
1909—							
Dairy cows ... No.	755,379	625,063	333,839	111,221	23,176	50,996	1,906,174
Production of milk gals.	201,183,337	162,994,658	70,642,888	29,778,032	4,893,446	11,600,000†	481,092,361
Aver. yield per cow gals.	266	261	212	268	168	227	252
1910—							
Dairy Cows ...	826,443	668,777	365,444	120,184	30,785	52,966	2,064,599
Production of milk gals.	235,577,702	196,674,373	87,648,322	34,672,756	5,125,124	13,300,000†	572,998,277
Aver. yield per cow gals.	285	294	240	288	166	251	278
1911—							
Dairy Cows ...	857,118	699,555	357,095	121,808	28,230	56,858	2,120,659
Production of milk gals.	237,623,000	238,149,700	71,770,148	27,952,612	5,017,004	14,214,500	594,726,964
Aver. yield per cow gals.	277	340	200	230	178	250	280

* Including figures for Federal Capital Territory, which in 1911 were 1192 dairy cows; 153,090 gallons of milk, averaging 128 gallons per cow. † Estimated.

3. **Butter and Cheese.**—The butter output shews, in general, a tolerably steady increase since the drought year 1902, the most marked development being in Queensland. The production of butter reached its highest figures in 1911, the highest previous yields being in 1910 and 1906. The year 1910 marks the highest cheese production, the return being somewhat better than those for 1911 and 1909. In both butter and cheese a decrease took place in some of the States in 1907 and 1908, due to the dryness of the season. There was a recovery in 1909. For the five years from 1907 to 1911 the figures are:—

PRODUCTION OF BUTTER AND CHEESE, COMMONWEALTH, 1907 to 1911.

State.	1907.	1908.	1909.	1910.	1911.
BUTTER.					
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales*	60,041,429	61,380,876	62,865,608	76,624,830	83,208,568
Victoria ...	63,746,354	48,461,398	55,166,555	70,603,787	86,500,474
Queensland ...	22,789,158	23,638,357	24,592,711	31,258,333	27,858,535
South Australia ...	8,519,340	8,130,560	8,482,168	10,717,486	9,694,666
Western Australia ...	436,523	365,593	414,453	641,491	498,047
Tasmania† ...	847,860	3,140,573	2,751,757	3,365,988	3,617,455
Commonwealth† ...	156,380,670	145,317,357	154,273,252	193,211,909	211,577,745
CHEESE.					
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	4,586,857	4,763,360	4,775,268	5,191,089	5,460,652
Victoria ...	4,397,909	4,328,644	5,025,834	4,530,893	4,549,843
Queensland ...	2,684,588	3,199,510	3,662,497	4,146,661	3,718,257
South Australia ...	1,885,790	1,556,894	1,578,378	1,796,281	1,526,930
Western Australia ...	580	980	1,570	3,306	900
Tasmania† ...	327,839	910,400	731,290	868,781	630,130
Commonwealth† ...	13,383,563	14,759,788	15,774,837	16,537,011	15,886,712

* Including Federal Capital Territory, where, in 1911, 31,630 lbs. of butter were produced.

† Prior to 1908 Tasmanian statistics relate only to the quantities made in factories. † The totals for the Commonwealth here given for 1907 are exclusive of Tasmanian butter and cheese made elsewhere than in factories.

4. **Concentrated Milk.**—"Condensed" or "concentrated" milk denotes milk the bulk of which is reduced by evaporation, no sweetening agent being added. When a sweetening agent is added it is called "preserved" milk. Small quantities of such milk were

made prior to 1911, in which year the output for the Commonwealth was nearly doubled, Victoria shewing a marked increase. There is still a large import of milk, as will be seen from the tables hereunder. No condensed or concentrated milk is made in South Australia, Western Australia, or Tasmania. In New South Wales, Victoria, and Queensland the following quantities are returned for 1908, 1909, 1910, and 1911:—

CONDENSED AND CONCENTRATED MILK MADE, 1908, 1909, 1910 and 1911.

Year.	N.S.W.	Victoria.	Queensland.	Commonwealth.
	lbs.	lbs.	lbs.	lbs.
1908	2,399,673	3,308,854	3,935,024	9,643,551
1909	2,400,687	3,487,312	7,038,202	12,926,201
1910	1,940,481	2,707,110	7,843,670	12,491,261
1911	3,058,497	13,697,691	6,227,519	22,983,707

5. **Oversea Trade in Milk, Butter, and Cheese.**—The tables following give the imports, exports, and net exports or imports of butter, cheese, and milk. In each of the five years exports of butter exceeded imports; in two the cheese import was heavier than the export, and this was the case each year with milk.

IMPORTS, EXPORTS, AND NET IMPORTS OF BUTTER, CHEESE AND MILK, COMMONWEALTH, 1907 to 1911.

IMPORTS.

Products.	1907.	1908.	1909.	1910.	1911.
Butter	lbs. 20,885	40,874	80,111	71,695	22,607
	£ 910	2,368	4,078	3,570	1,081
Cheese	lbs. 299,711	566,808	367,504	303,155	318,891
	£ 12,371	20,433	14,720	13,772	14,461
Milk—concentrated and preserved ¹	lbs. 9,279,091	9,145,306	7,439,232	8,543,158	4,166,117
	£ 170,478	180,194	145,736	135,297	74,278

EXPORTS.

Butter	lbs. 66,076,915	51,206,359	55,700,987	87,928,151	101,722,136
	£ 2,890,261	2,387,450	2,402,619	3,952,808	4,637,362
Cheese	lbs. 495,530	153,589	203,477	921,583	1,159,363
	£ 12,896	5,237	5,771	22,178	27,243
Milk—concentrated and preserved ¹	lbs. 322,119	309,789	360,821	517,634	1,260,323
	£ 6,305	7,013	7,852	10,289	21,990

NET EXPORTS.²

Butter	lbs. 66,056,030	51,165,485	55,620,876	87,856,456	101,699,529
	£ 2,889,351	2,385,082	2,398,541	3,949,238	4,636,281
Cheese	lbs. 195,819	413,219	164,027	618,428	840,472
	£ 525	15,196	8,949	8,406	12,782
Milk—concentrated and preserved ¹	lbs. 8,956,972	8,835,517	7,078,411	8,025,524	2,905,794
	£ 164,173	173,181	137,684	125,008	52,288

1. See definition on page 434. 2. — signifies net imports.

The large quantities of concentrated and preserved milk imported for local use indicate room for development in this industry.

6. **Local Consumption of Butter and Cheese.**—The total production of butter and cheese, with the net export or import subtracted or added, gives approximately the consumption in the Commonwealth. In the period considered hereunder, 1907, 1910 and 1911 were the years in which the local supply of cheese was adequate:—

BUTTER AND CHEESE LOCALLY CONSUMED, 1907 to 1911.

Product.		1907.	1908.	1909.	1910.	1911.
		lbs.	lbs.	lbs.	lbs.	lbs.
Butter	... Total	90,324,640	94,151,872	98,652,376	105,569,150	109,878,216
	... Per head of mean population	21.9	22.4	23.1	24.2	24.5
Cheese	... Total	13,579,382	15,173,007	15,938,864	15,918,853	15,046,240
"	... Per head of mean population	3.3	3.6	3.8	3.7	3.4

The consumption in 1911 averaged 24.5 lbs. of butter and 3.4 lbs. of cheese per head of mean population, an amount probably unsurpassed anywhere. The consumption of butter and cheese in the United Kingdom is given as about 19 lbs. per head.

§ 3. Pigs, Bacon, etc.

1. **Pigs.**—The pigs in Australasia numbered 43 in 1792; 4017 in 1800; 8992 in 1810; 33,906 in 1821; 66,086 in 1842; and 121,035 in 1851. The figures for each State in subsequent census years, and in the last five years, were as follows:—

NUMBER OF PIGS, COMMONWEALTH, 1861 to 1911.

State.	1861.	1871.	1881.	1891.	1901.	1907.	1908.	1909.	1910.	1911.
New South Wales ...	146,091	213,193	213,916	253,189	265,730	216,145	215,822	237,849	321,632	370,700
Victoria ...	43,480	177,447	239,926	286,780	334,295	211,002	179,358	217,921	333,281	348,069
Queensland ...	7,465	32,707	56,438	122,672	121,641	133,246	124,749	124,803	152,212	173,902
South Australia ...	69,286	95,542	120,718	83,797	88,886	90,741	78,454	80,410	96,386	93,130
Western Australia...	11,984	14,265	22,530	25,930	61,052	53,399	46,652	47,062	57,628	55,635
Tasmania ...	40,841	52,863	49,660	73,520	58,716	46,704	47,945	55,705	63,715	67,392
Northern Territory	*	*	*	*	989	2,864	2,711	1,387	996	1,500
Federal Capital Territory	†	†	†	†	†	†	†	†	†	393
Commonwealth	319,147	586,017	703,188	845,888	931,309	754,101	695,691	765,137	1,025,850	1,110,721

* Included in South Australia. † Included in New South Wales.

Prior to 1911 the number of pigs was highest in 1904, when for the first time it was over a million; prior to 1899 it had never reached 900,000. That year, the two immediately following, and 1904, 1905, 1910 and 1911 mark the highest totals. An examination of the returns shews remarkable fluctuations. In none of the States was the number as high in 1906 as in the preceding year, and in Tasmania alone was the figure for 1907 higher than that for 1906. A similar experience was met in 1908. In several States the falling-off over the three years is very marked. In 1909 a considerable recovery in the figures is shewn, increases over 1908 being large in New South Wales, Victoria, and Tasmania. The increase in 1910 in all the States is still more remarkable, being thirty-four per cent. in the whole Commonwealth. In 1911 there was a further increase. The number of pigs per head of population, and the number per square mile, will be found in the tables of live stock, pages 331 and 332.

2. **Bacon and Ham.**—From 1905 to 1908 the production of bacon and ham in the Commonwealth shewed little annual variation. In 1909 there was a considerable falling-off, and large increases in 1910 and 1911. It will be noticed from the table above that the number of pigs in Australia in 1908 was much below the average.

PRODUCTION OF BACON AND HAM, COMMONWEALTH, 1907 to 1911.

State.	1907.	1908.	1909.	1910.	1911.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales* ...	10,358,526	9,488,299	9,931,377	12,620,067	16,102,827
Victoria ...	17,545,720	14,411,401	13,620,485	16,488,837	19,546,772
Queensland ...	10,015,008	11,324,323	9,228,317	10,758,963	11,667,654
South Australia ...	2,311,004	3,392,162	3,348,050	3,741,942	4,311,497
Western Australia ...	209,419	152,896	120,623	121,154	97,136
Tasmania† ...	279,504	1,383,856	1,526,115	1,468,789	1,538,766
Commonwealth‡ ...	40,719,181	40,102,937	37,774,967	45,149,752	53,264,652

* Including Federal Capital Territory where in 1911 22,670 lbs. of bacon and ham were produced. † Prior to 1908 Tasmanian statistics relate only to quantities made in factories. ‡ The totals for the Commonwealth here given for 1907 are exclusive of Tasmanian bacon and ham made elsewhere than in factories.

3. Oversea Trade in Pig Products.—The oversea trade in pigs and pig products is shewn in the following tables:—

IMPORTS, EXPORTS, AND NET EXPORTS OF BACON AND HAM, FROZEN PORK, PIGS AND LARD, COMMONWEALTH, 1907 to 1911.

Particulars.	1907.	1908.	1909.	1910.	1911.
BACON AND HAM.					
Imports ...	lbs. 237,644	273,922	244,903	204,488	201,309
" ...	£ 9,625	10,018	9,384	8,687	8,566
Exports ...	lbs. 420,819	391,820	403,801	1,605,699	2,340,612
" ...	£ 17,579	18,360	18,979	57,060	74,178
Net Exports ...	lbs. 183,175	117,898	158,898	1,401,211	2,139,303
" ...	£ 7,954	8,347	9,595	48,373	65,612
FROZEN PORK.					
Imports ...	lbs. 187,479	110,647	109,620	106,757	...
" ...	£ 5,312	3,329	3,301	3,227	...
Exports ...	lbs. 1,446,758	826,102	394,559	741,410	1,640,013
" ...	£ 28,406	20,446	9,318	17,087	33,639
Net Exports ...	lbs. 1,259,279	715,455	284,939	634,653	1,640,013
" ...	£ 23,094	17,117	6,017	18,860	33,639
PIGS.					
Imports ...	No. 7	39	31	50	35
" ...	£ 69	968	1,177	799	539
Exports ...	No. 185	117	229	303	385
" ...	£ 383	297	460	477	748
Net Exports ¹ ...	No. 178	78	198	253	350
" ...	£ 314	— 671	— 717	— 322	209
LARD.					
Imports ...	lbs. 36,625	313,060	358,213	198,897	387,626
" ...	£ 980	7,681	9,148	5,573	9,870
Exports ...	lbs. 458,327	511,774	1,618,995	3,112,190	3,399,386
" ...	£ 8,554	10,906	28,948	62,664	57,861
Net Exports ...	lbs. 421,702	198,714	1,260,782	2,913,293	3,011,760
" ...	£ 7,574	3,225	19,800	57,091	47,991

1. — signifies net imports.

From 1901 to 1903 there was a considerable net import of bacon and ham, but for the following years there was a large net export. The local production of frozen pork and lard was for each of the years shewn more than sufficient for the local demand. The net export of pig products was considerably greater in 1910 than in previous years, and in 1911 considerably greater than in 1910.

4. Local Consumption of Bacon and Ham.—From 1904 to 1911 the production of bacon and ham was sufficient to meet the local demand, and there was a surplus for export, but in 1901, 1902, and 1903 this was otherwise, and considerable quantities were imported.

BACON AND HAM LOCALLY CONSUMED, 1907 to 1911.

Consumption.	1907.	1908.	1909.	1910.	1911.
	lbs.	lbs.	lbs.	lbs.	lbs.
Total	40,536,006	39,985,039	37,616,069	43,748,541	51,125,349
Per head of mean population ...	9.8	9.5	8.8	10.0	11.4

5. Total Dairy Production.—The total dairy production of the Commonwealth in 1911 is shewn below:—

TOTAL DAIRY PRODUCTION, COMMONWEALTH, 1911.

Where Produced.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
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MILK.

	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.
On Dairy & other Farms	237,623,000	238,149,700	71,770,148	27,952,612	5,017,004	14,214,500†	594,726,964

BUTTER.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories	78,425,512*	81,267,119	26,017,397	6,023,017	181,756	3,317,455	105,232,256
On Dairy & other Farms	4,783,056†	5,233,355	1,841,138	3,671,649	316,291	500,000†	16,345,489
Total	83,208,568*	86,500,474	27,858,535	9,694,666	498,047	3,817,455†	211,577,745

CHEESE.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories	3,485,919	3,047,261	3,633,886	1,520,537	...	480,130	12,167,733
On Dairy & other Farms	1,974,733	1,502,582	84,371	6,393	900	150,000†	3,718,979
Total	5,460,652	4,549,843	3,718,257	1,526,930	900	630,130†	15,886,712

CONDENSED OR CONCENTRATED MILK.

	lbs.	lbs.	lbs.	...	...	...	lbs.
In Factories	3,058,497	13,697,691	6,227,519	...	...	...	22,983,707

BACON AND HAM.

	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories	13,393,536*	15,190,449	10,726,070	3,071,669	...	838,766	43,220,490
On Dairy & other Farms	2,709,291†	4,356,323	941,584	1,239,828	97,136	700,000†	10,044,162
Total	16,102,827*	19,546,772	11,667,654	4,311,497	97,136	1,538,766†	53,264,652

* Including Federal Capital Territory, where there was produced 27,630 lbs. of butter on farms and 4000 lbs. of butter in factories; also 22,670 lbs. of bacon and hams (on farms). † Estimated.

§ 4. Poultry Farming.

1. **Development of the Industry.**—Until recently, poultry farming as a well organised industry could scarcely be said to exist, although both in metropolitan and country districts poultry has of course long been kept for the table and egg supplies. The aggregate output, though considerable, represented relatively little value beyond the cost of production, owing to imperfect management. Many farmers however, both wheat-growers and dairymen, have maintained a large poultry stock, erecting poultry yards constructed on modern principles, and feeding from the stubble fields and waste grain with a minimum expenditure in tending. This brought about a considerable addition to the net agricultural or dairying return. The poultry industry during recent years has assumed an independent position among rural industries, notwithstanding that large numbers of poultry runs on wheat and dairy farms are still maintained; poultry farming is also carried on in conjunction with pig farming. In special poultry farms, breeding on scientific principles and a proper arrangement of the runs is secured, feeding and reproduction are technically attended to, and proper shelter is provided either by means of trees or sheds. Poultry experts are engaged by the State Government to instruct in matters that will amplify the returns. Poultry for consumption is extensively reared, and the egg-producing qualities of the birds have also been greatly improved by careful breeding. Egg collecting circles were formed in some districts to develop the industry on co-operative lines.

Another method of collecting and marketing the eggs is through the local butter factories, where eggs are delivered by the suppliers of milk and cream a number of times each week.

2. **Production of Poultry.**—Figures for the yield of poultry products are difficult to obtain. The following values are returned :—

ESTIMATED VALUE OF POULTRY AND EGGS, COMMONWEALTH, 1908-9, 1909-10, 1910-11, and 1911-12.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1908-9 ...	1,202,000	1,547,000		399,349	133,544	*	3,281,893†
1909-10 ...	1,309,000	1,570,000	185,000	431,575	160,562	*	3,656,137†
1910-11 ...	1,170,000	1,592,000	204,000	496,311	168,251	227,000	3,857,562
1911-12 ...	1,200,000§	1,618,500	195,000	533,941	175,890	230,000	3,953,331

* Not available. † Excluding Queensland and Tasmania. ‡ Excluding Tasmania.

§ Including Federal Capital Territory, where the estimated value was £1800.

3. **Oversea Trade in Poultry Products.**—The imports and exports of eggs shew a considerable balance on the side of imports in each of the years 1901 to 1906 and in 1909, 1910 and 1911. In 1907 the export greatly exceeded the import, and in 1908 the imports were greater in quantity, but less in value, than the exports. In 1909, 1910 and 1911, the balance, both in number and value, was on the side of imports. The figures for frozen poultry indicate that a considerable oversea trade is carried on.

IMPORTS, EXPORTS, AND NET EXPORTS OF EGGS AND LIVE AND FROZEN POULTRY, COMMONWEALTH, 1907 to 1911.

Particulars.	1907.	1908.	1909.	1910.	1911.
EGGS.					
Imports ... doz.	60,114	31,247	38,931	39,330	40,969
" ... £	1,791	856	1,007	1,111	1,209
Exports ... doz.	88,684	17,261	10,527	3,853	5,734
" ... £	3,421	1,082	713	326	1,124
Net exports ¹ ... doz.	28,570	13,986	28,404	35,477	35,235
" ... £	1,680	226	294	785	85
LIVE POULTRY.					
Imports ... No.	2,883	2,372	1,862	1,274	2,398
" ... £	957	633	944	663	964
Exports ... No.	3,280	2,290	4,708	3,251	2,218
" ... £	1,248	1,043	1,475	1,057	1,068
Net exports ¹ ... No.	397	82	2,846	1,977	180
" ... £	291	410	581	394	104
FROZEN POULTRY.					
Imports ... lbs.	1,452	2,242	3,565	4,811	5,658
" ... £	43	75	100	131	257
Exports ... pair	31,261	22,444	5,828	7,680	16,869
" ... £	8,556	7,335	3,127	4,171	7,470
Net exports ... pair	2	2	2	2	2
" ... £	8,513	7,260	3,027	4,040	7,213

1. — signifies net imports.

2. Quantity not available.

§ 5. Bee Farming.

1. **The Bee-farming Industry.**—Bee farming, like poultry farming, has ordinarily been an adjunct to agricultural or dairying industries, and can hardly yet be said to have been organised as a distinct industry. The returns collected shew that, while production varies greatly, there is on the whole a fair improvement, to which the large increase in the Western Australian product since 1902 has considerably contributed. The annual average returns of honey from the hives range between 20 lbs. and 60 lbs. per hive.

The value of the export of honey from Australia was only £1541 in 1907, £3361 in 1908, £2675 in 1909, £2439 in 1910, and £4414 in 1911. It is believed that this export could be considerably increased. Australian honey exhibited in the Franco-British Exhibition in London in 1908, obtained the highest award. It has been proved that there is no eucalyptus flavour in Australian honey, and the prejudice against it on that account is ill-founded.

2. **Production of Honey and Beeswax.**—The particulars of honey production are as given below:—

NUMBER OF HIVES AND PRODUCTION OF HONEY AND BEESWAX, 1908 to 1912.

State.	Bee Hives.			Honey Produced.		Beeswax Produced	
	Productive	Un-productive.	Total.	Quantity.	Value.	Quantity.	Value.
1908.	No.	No.	No.	lbs.	£	lbs.	£
New South Wales	53,240	15,148	68,388	2,660,363	27,700	48,427	2,700
Victoria	27,505	15,707	43,212	1,138,992	13,050	24,521	1,330
Queensland	10,366	3,956	14,322	442,827	3,993	8,554	402
South Australia	18,529	5,101	23,630	953,395	8,938	12,854	696
Western Australia	9,881	2,140	12,021	255,489	3,726	6,454	565
Commonwealth*	119,521	42,052	161,573	5,451,066	57,407	100,810	5,693
1909.							
New South Wales	53,602	16,344	69,946	3,064,526	31,920	58,697	3,420
Victoria	27,505	15,707	43,212	1,138,992	13,050	24,521	1,330
Queensland	10,999	3,283	14,282	445,432	4,119	9,707	492
South Australia	19,549	4,471	24,020	1,007,717	10,497	12,063	603
Western Australia	13,928	2,631	16,559	309,109	3,122	6,217	466
Commonwealth*	119,521	42,052	161,573	5,451,066	57,407	100,810	5,693
1910.							
New South Wales	46,813	17,986	64,799	2,066,330	25,800	53,006	3,100
Victoria	32,914	9,718	42,632	1,611,284	18,463	22,369	1,305
Queensland	11,322	3,135	14,457	548,171	5,224	11,849	605
South Australia	17,551	6,450	24,001	812,487	8,463	10,059	503
Western Australia	10,902	2,837	13,739	409,345	4,264	9,841	574
Commonwealth*	119,502	40,126	159,628	5,447,617	62,214	107,124	6,087
1911.							
New South Wales	55,958	14,308	70,266	2,765,618	37,700	72,617	3,700
Victoria	37,541	15,221	52,762	2,308,405	24,046	34,695	1,880
Queensland	11,271	4,104	15,375	517,565	5,100	11,798	595
South Australia	22,786	5,204	27,990	996,376	10,379	10,608	552
Western Australia	8,686	1,934	10,620	338,507	4,231	7,215	541
Commonwealth*	136,242	40,771	177,013	6,926,471	81,456	136,933	7,268
1912.							
New South Wales†	62,254	11,801	74,055	3,363,253	35,000	67,358	4,000
Victoria	37,052	16,659	53,711	1,635,260	20,441	28,405	1,420
Queensland	11,857	3,088	14,945	574,973	5,750	11,419	570
South Australia	18,015	10,029	28,044	760,094	8,709	9,745	528
Western Australia	8,686	2,032	10,718	416,823	5,210	13,730	1,030
Tasmania	†	†	†	†	3,000	†	300
Commonwealth*	137,864*	43,609*	181,473*	6,750,403*	78,110	130,657*	7,848

* Exclusive of Tasmania.

† Not available.

† Including Federal Capital Territory, where the hives numbered 552, of which 524 were productive; 38,764 lbs. of honey, valued at £400, and 672 lbs. of beeswax, valued at £38, were produced.

3. **Oversea Trade in Bee Products.**—Both honey and beeswax are produced in the Commonwealth in sufficient quantities to supply all local requirements, and a considerable quantity of each is sent oversea.

**IMPORTS, EXPORTS, AND NET EXPORTS OF HONEY AND BEESWAX,
COMMONWEALTH, 1907 to 1911.**

Particulars.	1907	1908.	1909.	1910.	1911.
HONEY.					
Imports	2,716	9,315	9,842	872	2,477
"	35	98	249	23	93
Exports	102,047	226,465	168,953	182,083	353,367
"	1,541	3,361	2,675	2,439	4,414
Net Exports	99,331	217,150	159,111	181,211	350,890
"	1,506	3,263	2,426	2,416	4,321
BEESWAX.					
Imports	14,070	7,527	19,041	7,821	8,335
"	978	460	1,112	505	564
Exports	27,086	41,177	35,540	26,408	12,691
"	1,618	2,479	2,064	1,587	751
Net Exports	13,016	33,650	16,499	18,587	4,356
"	640	2,019	952	1,082	187

§ 6. Summary of Australian Farmyard and Dairy Products.

The value of the principal farmyard and dairy products raised in the Commonwealth in 1911 was:—

**VALUE OF THE PRINCIPAL FARMYARD AND DAIRY PRODUCTS IN THE
COMMONWEALTH DURING THE YEAR 1911.**

Produce.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aus.	Tas.	N. T.	F. Cp. Terr.	C'wealth.
	£	£	£	£	£	£	£	£	£
Milk, cons'm'd									
as such	702,300	700,100	158,300	154,200	79,100	79,300	2,500	1,100	1,876,900
Butter	3,639,000	3,982,000	1,242,500	463,000	26,500	169,500	(a)	1,400	9,523,900
Cheese	132,500	117,000	89,000	41,000	30	15,000	(a)	...	394,530
C'ndensed & concen'ted milk	41,488	228,295	115,671	...	...	...	...	...	385,454
Bacon & ham	410,000	570,000	368,000	128,000	3,000	41,000	...	600	1,520,600
Poultry & eggs	1,198,200	1,618,500	195,000	533,941	175,890	230,000	...	1,800	3,953,331
Honey & wax	38,562	21,861	6,320	9,237	6,240	3,300	...	438	85,958

(a) Information not available.

§ 7. Summary of Australian Farmyard and Dairy Products Exported, 1907 to 1911.

The quantities and values of Australian farmyard and dairy products exported from the Commonwealth during each of the years 1907 to 1911 are shown below:—

QUANTITIES OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING EACH OF THE YEARS 1907 to 1911.

Products.	1907.	1908.	1909.	1910.	1911.
Beeswax lbs.	27,058	41,177	35,540	26,408	12,671
Butter "	66,076,915	51,193,311	55,644,925	87,894,943	101,722,136
Cheese "	491,209	131,001	188,204	911,760	1,149,134
Eggs, albumen and yolk doz.	88,615	17,113	10,359	3,753	5,542
Feathers, undressed "	102,047	226,465	168,953	182,023	353,367
Honey lbs.	458,059	511,016	1,617,442	3,105,307	3,399,209
Meats—					
Bacon and ham pair	415,251	389,718	396,342	1,604,362	2,338,299
Frozen poultry lbs.	31,261	22,444	5,828	7,680	16,869
" pork "	1,446,758	826,102	394,559	741,410	1,641,013
Milk, concentrated and preserved No.	162,367	139,165	169,310	266,904	1,017,072
Pigs, living "	185	117	229	303	385
Poultry, living "	3,230	2,290	4,708	3,251	2,198

* Quantity not available.

VALUE OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING THE YEARS 1907 to 1911.

Products.	1907.	1908.	1909.	1910.	1911.
Beeswax £	1,617	2,479	2,064	1,587	749
Butter "	2,890,261	2,386,548	2,399,893	3,951,131	4,637,362
Cheese "	12,733	4,905	5,837	21,730	26,754
Eggs, albumen and yolk "	3,419	1,074	706	320	437
Feathers, undressed "	2,610	2,636	2,244	2,021	2,971
Honey "	1,541	3,361	2,675	2,485	4,414
Lard "	8,547	10,884	28,876	62,174	57,854
Meats—					
Bacon and ham £	17,348	18,258	18,682	56,995	74,065
Frozen poultry "	8,556	7,335	3,127	4,171	7,470
" pork "	28,406	20,446	9,318	17,087	33,639
Milk, concentrated and preserved "	2,924	3,139	3,313	4,865	16,675
Pigs, living "	383	297	460	477	748
Poultry, living "	1,248	1,043	1,475	1,057	1,038
Total £	2,979,593	2,462,340	2,477,980	4,127,074	4,864,827

§ 8. British Imports of Dairy Products.

1. Value of Britain's Imports of Dairy Products.—Great Britain has paid annually since 1901 considerably more than £20,000,000 for imported butter, the value of the import in 1908, 1909, 1910 and 1911 being £24,081,000, £22,425,000, £24,493,000, and £24,600,000 respectively; for imported cheese the amounts in the years named were

respectively £6,684,000, £6,830,000, £6,810,000 and £7,140,000; for bacon and ham, £17,565,000, £16,914,000, £15,918,000, and £17,391,000 respectively; and for pork, £1,660,000, £1,836,000, £1,500,000, and £1,413,000 respectively.

2. **Butter.**—Australia in 1911 stood second in the value of butter imported into the United Kingdom, but the import of other Australian dairy products was inconsiderable.

IMPORTS OF BUTTER INTO THE UNITED KINGDOM, 1911.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value.
	Cwt.	£		Cwt.	£
Denmark ...	1,707,178	10,509,137	Canada ...	61,936	355,063
Australia ...	896,085	4,604,284	Norway...	29,813	173,939
Russia ...	688,284	3,312,569	Argentine Republic	24,209	145,154
Sweden ...	360,357	2,183,770	United States ...	23,052	119,172
New Zealand	276,446	1,495,242	Other Countries ...	9,597	49,108
France ...	171,080	1,066,702			
Netherlands	104,655	586,479	Total ...	4,302,692	24,600,619

In October, 1907, a falling-off of imports of Australian butter into Great Britain was noticed, with the result that, three months later, there was a heavy shortage, and a "butter boom" ensued in London, prices rising rapidly, until a limit was reached with 156s. per cwt., the highest recorded for Australasian butter. After a short period of high values in February, 1908, prices steadied at 116s., and then gradually fell to 104s. in the middle of May, when European grass-fed butter was ready for the British market. In January, 1910, the average price was 111s. After a fall in 1911, 134s. was reached in the middle of January, 1912. Prices in London during the last five years have been considerably higher than the average of any previous year since the Australian export trade was instituted twenty years ago. A marked approach to Danish values has been made in the prices of Australian butter in the 1911-12 season.

3. **Cheese.**—The value of the British cheese import in 1911 was £7,140,000, of which over four and a half million pounds' worth was received from Canada. Small experimental shipments from Australia were made in 1908 and following years, a fair price being realised. In 1911, the value of the import from Australia was £37,000.

4. **Bacon and Ham.**—Of a total import of bacon and ham valued in 1911 at £17,391,000, Great Britain received goods to the value of £7,780,000 from the United States; £6,696,000 from Denmark; and £1,991,000 from Canada. The British import from Australia was small, but experimental shipments have been made during recent years.

5. **Pork.**—The total value of British imports of pork (including refrigerated, frozen and salted) was £1,413,000 in 1911. Of this the value of Australian produce was *nil*, whilst from the Netherlands pork valued at £1,126,000 was imported into Great Britain.

6. **Other Products.**—There is practically no British import from Australia of honey, beeswax, poultry, game, lard, or eggs, but frozen rabbits to the value of £463,000 were received from the Commonwealth in 1911.

§ 8. Graphical Representation of Dairy Production.

Two graphs shewing respectively the increase in dairy production and in the exports of butter will be found on page 360.

SECTION X.

FORESTS, FORESTRY, AND FORESTAL PRODUCTS.

§ 1. The Forests of Australia.

1. **Extent of Forests.**—Although no definite survey of forest lands has been made on a uniform basis for the different States of Australia, the following table gives the results of careful estimates made for each State:—

FOREST RESERVES AND FOREST AREAS, STATES AND COMMONWEALTH, 1911.

State.	Specially Reserved for Timber.	Total Forest Area.	Percentage of State Area.		Percentage of Com- monwealth Area.	
			Specially Reserved.	Total Forest.	Specially Reserved.	Total Forest.
	Acres.	Acres.	%	%	%	%
New South Wales	*7,379,395	15,000,000	3.72	7.55	0.39	0.78
Victoria	4,160,342	11,800,000	7.40	20.98	0.22	0.62
Queensland	3,714,919	40,000,000	0.87	9.32	0.19	2.10
South Australia	161,004	3,800,000	0.03	0.66	0.01	0.20
Western Australia	11,148,487	20,400,000	17.85	3.27	0.58	1.07
Tasmania	†1,000,000	11,000,000	5.95	65.56	0.05	0.58
Commonwealth	27,564,147	102,000,000	—	—	1.44	5.35

* Inclusive of 6,730 acres within the Federal area. † Approximate.

The actual area of wooded land is probably in all cases much greater than shewn above. For example, that of Western Australia is estimated at 97,900,000 acres; Queensland has probably 143,000,000 acres; and Victoria has a considerable extent of "Mallee" country not included in the above estimate. The basis of estimation for each State in any case cannot be regarded as quite identical. Considerable areas not included as forest lands possess timber of local value.

The absolute and relative forest areas of Australia and other countries are shewn in the table on the next page.

In each of the States areas have been set apart as State forests and "timber reserves," in some cases the reservation being made in perpetuity, in others for a definite period; in others again the reservation may be cancelled at any time. The characteristics of the forest areas of the different States are referred to seriatim.

RELATIVE AREAS OF FOREST LANDS, AUSTRALIA AND OTHER COUNTRIES, 1910.

Country.	Total Forest Area.	Percentage of Total Area.	Country.	Total Forest Area.	Percentage of Total Area.
	Sq. Miles.	%		Sq. Miles.	%
Commonwealth ...	159,375	5.35	Rumania ...	10,836	21.86
New Zealand ...	26,678	25.65	Sweden ...	90,241	52.20
United Kingdom ...	4,800	3.96	Norway ...	26,685	21.50
France ...	36,005	17.58	Russia in Europe ...	859,375	43.04
Algeria ...	10,249	2.98	United States ...	860,000	24.08
Germany ...	54,015	25.90	Canada ...	836,000	22.33
Switzerland ...	3,290	20.60	Cape Colony ...	537	0.19
Italy ...	15,796	14.29	British India ...	126,858	11.55
Austria ...	37,700	31.66	Japan ...	29,008	19.64
Hungary ...	34,750	29.30			

2. **Characteristics of State Forest Areas.**—(i.) *New South Wales.* Great diversity exists in the more dense distribution of timber trees in the coastal region, between the Great Dividing Range and the Pacific Ocean. The areas of natural forest, however, are found in nearly every part of the State except the wide plains of the Murrumbidgee, Lachlan, and Darling districts, the level surface of which is chiefly covered with salt bush, scrub, and indigenous grasses, while the tree-growth is, as a rule, confined to belts of red gum, box, sheoak, and myall along the courses of the rivers and their tributaries, and to groves of cypress pine at intervals. The tree-clad regions of the State may be divided into open, brush, and scrub forests. The first class has the widest distribution, being found in every geological formation, and including some of the finest timbers, such as many species of eucalyptus, angophora, and other genera of the natural order of myrtles. Among the hardwoods, red gum usually marks the courses of streams, while on the rough and stony mountain and hill ridges, with their sheltered gorges, are found several varieties of ironbark, blackbutt, tallowwood, spotted gum, grey box, red mahogany, forest red gum, Sydney blue gum, and turpentine. The brush or jungle forests occupy a considerable tract of country between the Dividing Range and the coast. In this region, interspersed occasionally with large Moreton Bay and other figs, fern trees, cabbage trees, and palms, grow some of the most beautiful timbers known for cabinet work and veneers, such as the red cedar, rosewood, silky oak, beech, red bean, beefwood, tulipwood, and coachwood. In addition to these, there are considerable supplies of the colonial or hoop pine, and the brown or berry pine. The scrub forests are represented by the red or black and white varieties of the cypress pine, and many species of acacia and eucalyptus. These are chiefly situated in the western portion of the State, and although the pines and some of the eucalypts are useful for local building and fencing, the bulk of the timber is of little commercial value.

(ii.) *Victoria.* The mountain ranges, principal of which are the Dividing Range and the Australian Alps, constitute the true forest regions of the country, the trees attaining considerable height and girth, and the brush or scrub growth great luxuriance. The lower elevations of the ranges, remote from settlement, are densely wooded to their summits, but the peaks above the winter snow-line are either bare or covered only with dwarfed vegetation. Dense and luxuriant forests characterise the Otway Ranges and Gippsland, south of the Main Divide. The tree-growth in the Grampians consists chiefly of stringy-bark, white gum, grey and yellow box, and white ironbark, with some red gum and wattle. In the Pyrenees there are more valuable hardwoods, chiefly blue gum and messmate, with stringy-bark, grey and yellow box, red and white ironbark on the lower levels. In Wombat Forest, extending along both sides of the Dividing Range

from Creswick to Mount Macedon, the timber is almost wholly young messmate of good quality, with peppermint and swamp gum. Further eastward along the range messmate and stringy-bark prevail, with grey and yellow box and ironbark on the low country. In Delatite, and in the lower ranges of the Australian Alps generally, the timber increases in height and girth, and includes blue gum, messmate, and peppermint of fine quality, with ribbon gum, woollybutt and silvertop on the higher levels, and grey and yellow box with stringy bark along the lower slopes and valleys. The northern plains, extending westward from Wodonga to the Grampians, are thinly covered with open forests, the limits of the prevailing trees being defined in clearly-marked belts. Thus the main belt of red gum follows the course of the Murray and extends along the valleys of its tributaries, but is interspersed at intervals near the river with sand ridges bearing grey box and cypress pine. Southward of this belt, and between the streams, the prevailing trees are grey or yellow box, with red and white gum and stringy-bark on the low ridges. From Chiltern a line drawn westward through Rushworth, Heathcote, Bendigo, Dunolly, and St. Arnaud marks a long belt of ironbark, of both red and white varieties, interspersed with stringy-bark and grey or yellow box. In the north-west, between the Wimmera Plains and the Murray, the dwarf eucalypt known as the mallee scrub covers the plains, with belts of cypress pine at intervals, and red gum and box along the courses of streams and lakes. The south-west is poorly timbered, the prevailing trees being stringy-bark, with red gum along the streams, and white gum, box, lightwood, and honeysuckle on the plains and undulating country. In the Otway district are valuable timber forests; over 280 square miles are covered with blue gum, spotted gum, messmate, and mountain ash or blackbutt of fine quality, with some stringy-bark and white gum, while the valleys between the ridges bear valuable timber of fine grain such as blackwood, beech, satin box, olive, sycamore, and pencil cedar. Eastward of Melbourne, and on the watershed of the Yarra, there is another fine forest region, the trees consisting of spotted gum, mountain ash, messmate, and white gum, with blackwood, beech, sassafras, and silver wattle in the valleys. The ranges of Southern Gippsland bear blue gum, spotted gum, mountain ash, and yellow stringy-bark, while in the western and northern portions of the same district grow the mountain stringy-bark, spotted gum, blackbutt, and the Gippsland mountain ash or silvertop, with woollybutt and ribbon gum on the higher elevations of the Main Divide. In the eastern part of the district, stretching from the Lakes towards the Genoa River, are found the Bairnsdale grey box, the Gippsland mountain ash or silvertop, white and yellow stringy-bark, red ironbark and bloodwood. The prevailing timber in this part of Gippsland is the white stringy-bark, which forms large forests from the foothills of the Divide to the sea-coast.

(iii.) *Queensland.* The extensive forests of Queensland yield a great variety of woods, esteemed for their strength, durability, and beauty. The principal merchantable timbers lie between the eastern seaboard and the Great Dividing Range, which runs roughly parallel to, and about 200 miles from, the coast. At about the 21st parallel of south latitude, a spur runs westward nearly to the South Australian border, and bears on its crests and slopes much valuable timber. Forests are also found on the Denham, Johnstone, and Gilbert Ranges. The principal eucalypts are ironbark, grey, spotted, and red gum, blackbutt and turpentine; Moreton Bay, brown, and Bunya Bunya pines represent the conifers; and red cedar, beech, tulipwood, rosewood, red bean, and black bean are among the brush timbers of fine grain. On the extensive plateaux west of the Divide there is but little timber; and towards the vast basin of the interior, the low ridges and banks of the short water-courses bear a growth of stunted eucalypts such as the gimlet gum, the desert sheoak, acacias, and mallee.

The chief supply of mill timber (eucalypts, Moreton Bay pine, etc.) is in the southern coastal region, from the New South Wales border as far north as Gladstone. In the regions between Rockhampton and Ingham the supply is not so plentiful; but northward of the latter town, the red cedar, kauri pine, and black bean are luxuriant. Large

supplies of these valuable trees are found on the Barron Valley reserves, and in other localities between Ingham and Port Douglas. Inland from this zone of heavy forest is another, less densely timbered, bearing cypress and other pines, ironbarks and acacias. In the south-western regions of the State the cypress pine flourishes.

(iv.) *South Australia.* The principal forest districts of South Australia proper are restricted largely to the hill ranges in the neighbourhood of Adelaide and Spencer Gulf. The trees, however, have not the fulness and lofty growth of those of the eastern and south-western borders of Australia. Red gum is widely distributed, though never far from water; and there are belts of timber where, from the general appearance of the surrounding country, they would hardly be expected. The stringy bark has its habitat principally in the hills, and is but rarely seen on the plains; other useful hardwoods are the white and blue gum and peppermint. Blackwood (in demand for cabinet work) is common in the south-east and along the eastern border, but is rare near Adelaide. Wattle also is cultivated for its gum and bark. Sheoak appears in districts less thickly forest-clad, and ti-trees inhabit low, damp situations. The sandalwood trees grow luxuriantly in Yorke Peninsula. On the great plains of the interior there is little vegetation, patches of forest country being occasionally found, while here and there fertile spots of grass land, but generally not of large extent, are met with. Groups of stunted shrubs, and small scattered trees—sheoak, eucalyptus, and wattle—mostly of limited extent, rise from the plains like islands.

(v.) *Northern Territory.* In Central and Northern Australia there is little forest, until the hills where the waters of the northern river system take their rise are encountered. On the plains to the north of the McDonnell Ranges there is a thin clothing of mulga scrub, with gum trees marking the water-courses. Occasionally patches of heavier gum forests are met with. Stirling Creek is lined with the bean tree. The mulga scrub thickens, and with stunted and mallee gums furnishes a uniform vegetation as far north as Powell's Creek. Here, with red gum still lining the water-courses and flooded gums on the flats, the vegetation becomes more varied. On the ranges pines, fig trees, and orange trees (*Capparis*) occur. Heavy timber clothes the uplands about the Roper River, and the tableland which stretches across the territory at a distance from the coast of from 30 to 100 miles bears large paperbark trees, Leichhardt pines, and palms. On the higher steppes there is also abundance of bloodwood and other varieties of eucalyptus, besides other kinds of trees. Many prominent fibre plants are native to the territory.

(vi.) *Western Australia.* The coastal timber belt runs along the western shore from the Murchison River to the Leeuwin, and along the southern shore from that point to beyond Albany, clothing with trees the Victoria, Herschel, Darling, and Stirling Ranges. Pre-eminent among the trees of this State for strength and durability are the jarrah and karri. A great belt of the former stretches eastward of the Darling Range to upwards of 100 miles in breadth, with a length of 350 miles. Between this region and the coast are two well-marked belts of tuart and red gum. In the extreme south-west of the State the main karri belt stretches from Augusta to Albany. Eastward of the jarrah belt a strip of white gum encloses a narrow belt of York gum, its southern extremity almost reaching the coast, while its northern limit extends even beyond that of the jarrah tract. Still further east the forest thins, a poorer growth of white gum giving place to brushes, scrub, and dwarf trees. Along the shores of the Great Australian Bight there are stunted eucalypts, with casuarinas and wattle. In the north-west, on the King Leopold and St. George's Ranges, there are forest areas, but from Dampier Land to below Shark Bay there is no coastal forest, and in many cases the stunted bush and scrub lands infringe on the sea-coast.

(vii.) *Tasmania*. The Tasmanian forest consists chiefly of eucalypts, widely distributed over the island; and of conifers, such as the Huon, the King William, and the celery-top pines, flourishing in the western and southern parts. The principal hardwoods of the eucalypt family are the blue gum, stringy bark, peppermint, and silvertop iron-bark, while among woods of fine grain are the blackwood, beech or myrtle, sassafras, native cherry, and sheoak. Black and white wattles also flourish in various parts of Tasmania.

3. Distribution of Timber in the Commonwealth generally.—The more conspicuous timber regions of Australia as a whole are the eastern and southern portions, including Tasmania, and, again, the south-western portion northwards and eastwards from Cape Leeuwin. In regard to distribution, on the eastern side of the continent the largest timber is found on the crests and coastal slopes of the mountain ranges, but in the south-west, in addition to the vegetation between mountains and sea, a large area of forest stretches inland from the coastal ranges. The hills encircling Adelaide and Yorke and Eyre Peninsulas also bear good forest. The Kimberley district is timbered, and in the Northern Territory and round the shores of the Gulf of Carpentaria there are considerable forest areas. But the coastal regions of West and North-West Australia, except in the case of the districts named, and the shores of the Great Australian Bight and Encounter Bay, are devoid alike of mountains and forests. The interior of the continent is thinly timbered, or almost destitute of vegetation, an occasional limited area of forest, generally in connection with mountain systems (though these themselves are scarce), acting as a relief in the landscape.

§ 2. Forestry.

1. Objects.—Economic forestry, aiming at the conservation of forestal wealth by safeguarding forests against inconsiderate destruction, and by the suitable re-afforestation of denuded areas, is essential to the preservation of industries dependent upon an adequate supply of timber, and to the perpetuation of a necessary form of national wealth. Though in Australia large areas of virgin forests still remain, the inroads made by timber-getters, by agriculturists, and by pastoralists—who have destroyed large areas by “ring-barking”—are considerable; and it is not unlikely that climatological changes are caused thereby. It is asserted that variations in climate, and alternating periods of drought and flood, desiccation and erosion of soil, with loss or diminution of fertility, have resulted from forest denudation in countries bordering the Mediterranean. In many of the States of America diminished rainfall is said to have followed the destruction of large forest areas, and in Mauritius, timber-clearing in the hills destroyed the even distribution of rainfall, causing floods and soil denudation. Moreover, beneficial consequences appeared to have followed on the planting of trees on denuded lands, or along eroding coasts, and it is obvious that a forest covering tends to beneficially regulate the effects of rainfall.

Successful planting of exotics in various parts of the Commonwealth has demonstrated that the Australian climate is suitable for the cultivation of a large number of the most valuable and beautiful of the world's timber trees.

2. Forestry Departments.—Each State of the Commonwealth, excepting Tasmania, has organised a separate forestry department or branch of service specially charged with forestal matters. Forest improvement work is carried on, areas of young forest being cleaned up by the felling and removal of stunted, diseased and suppressed growth, the

burning of debris and the making of fire breaks. Provision is made for effective patrols in forest districts, to check the ravages caused by fires, often, it is believed, caused through carelessness. The following table gives a comparative indication of the attention paid to the subject, the particulars being those for 1911:—

STATE FORESTRY DEPARTMENTS, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aus.	Tas
Designation of officer in charge	Director of Forests	Conservator of Forests	Director of Forests	Conservator of Forests	Insp.-Gen. of Forests.	*
Salaries of persons engaged in administration and control	£ 2,761	3,152	503	1,157	935	250†
Salaries of technical experts, forest rangers, etc.	£ 12,521	14,524†	1,020	2,150	7,566	...
Incidental expenses	£ 9,840	548	1,302	570	1,813	...
No. of persons forming office staff	14	16	4	6	6	*
No. of persons forming field staff	75	68	6	26	32	*

* Administered by Lands Department. † Including allowances. ‡ Salary of Forestry Expert, who is also the Fruit Expert. In addition, there are two men employed at 7/- per day each.

The revenue and expenditure of the State Forestry Departments from 1907-8 to 1911-12 are given below:—

REVENUE OF STATE FORESTRY DEPARTMENTS, 1907-8 to 1911-12.

State.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
New South Wales ...	56,048	57,593	66,030	87,618	95,231
Victoria ...	29,013	40,678	37,992	43,886	45,077
Queensland ...	22,236	27,880	35,200	39,645	53,840
South Australia ...	3,474	3,416	3,089	3,756	4,849
Western Australia ...	23,500	29,484	31,549	23,985	23,456
Tasmania ...	3,841	3,871	3,840	4,366	3,800
Commonwealth ...	138,112	162,922	177,700	203,256	226,253

EXPENDITURE ON STATE FORESTRY DEPARTMENTS, 1907-8 to 1911-12.

State.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
New South Wales ...	19,545	20,169	24,510	26,695	34,408
Victoria ...	18,754	27,066	27,230	46,448	41,686
Queensland ...	6,940	4,652	5,000	8,000	2,954
South Australia ...	7,542	10,171	16,411	20,968	23,296
Western Australia ...	6,271	8,755	10,110	8,572	8,874
Tasmania ...	424	1,492	260	240	220
Commonwealth ...	59,476	72,305	83,521	110,923	111,438

3. **Sylvicultural Nurseries and Plantations.**—The growing recognition of the necessity for systematic sylviculture has led to the creation in most of the States of a number of sylvicultural nurseries and plantations.

(i.) *New South Wales.* In this State a small forest nursery is maintained at Gosford, between Sydney and Newcastle, from which young trees are widely distributed throughout the State, the bulk being issued to municipal councils and farmers, and for planting in parks, town reserves, hospital grounds, and cemeteries. Large sums have been distributed by the State in improvement fellings and the thinning out of young timber, principally in the Bogan, Narrandera, and Murray River districts. Over a quarter of a million acres of pine forest and red gum have been so treated.

A nursery has been established at Acton Homestead, which has been resumed by the Commonwealth Government. Excellent progress is being made. It is considered likely that in the near future there will be a plentiful supply of young trees and shrubs for planting out in the new Federal Capital city.

(ii.) *Victoria.* In Victoria there are three forest nurseries, situated at Macedon, Creswick, and Frankston. At Macedon the arboretum contains many fine specimens of the conifers and deciduous trees of Europe, America and Asia. While the bulk of the yields are retained for the State plantations, there are considerable distributions for public parks and recreation reserves, "arbor-day" planting of streets and roads, municipal councils and water trusts, mechanics' institutes and libraries, cemeteries, State schools and other institutions, and farmers and private persons, the applications of those in dry districts receiving first consideration.

Among the principal native hardwoods raised and distributed are blue gum, sugar gum, and tallowwood, with some jarrah for the plantations; among conifers, the Monterey, Corsican, Black Austrian, Canary Island, Maritime, and Aleppo pines, the blue pine of India, the American white and yellow pines, with several spruces; and among other exotics, peppers, Indian cedars, oaks, elms, planes, silver poplars, sycamores, and chestnuts. Great success has attended the establishment of a nursery for conifers at Creswick.

The principal forest plantation is along the lower slopes of the You Yangs, near Geelong, where about 1000 acres have been enclosed and planted with eucalyptus and conifers. Good results have attended the cultivation of the broad leaf and feather leaf wattles.

At another plantation, viz., at Sawpit Gully, among the foothills of the Dividing Range, near Creswick, conifers are chiefly grown. Minor plantations of blue gum and sugar gum are established at Havelock and Majorca, near Maryborough; and at Mount Macedon, the principal species of oak, elm, ash, plane, sycamore, pine, spruce, eucalyptus, and willows are planted. In recent years additional planting of conifers has been carried out at Creswick, Frankston, and Warrnambool, and a large area has been sown with tan-yielding wattles at the You Yangs.

The principal work in forest reserves and plantations is improvement thinning and felling, planting, fencing, and construction of dams. The planted area of some of the older plantations has been enlarged.

Officers of the Lands and Forest Departments have made joint inspections of portions of reserved forests, to discover what areas, suitable for settlement, can be excised from the forest and made available. As a result, the forests will suffer a further loss of 20,000 acres. The officers have also recommended the addition of large areas to the State reserves.

Recent legislation makes provision for the stricter control of grazing in forests, and for more efficient protection from fire.

(iii.) *Queensland.* In Queensland there is a forest plantation of 500 acres. The questions of replanting and further reservation have lately been attracting attention, and the prominence given to them will probably greatly influence forest policy.

(iv.) *South Australia.* In this State there are several plantations, the most important being at Bundaleer and Wirrabarra, situated some 150 and 190 miles respectively to the north of Adelaide in the direction of Spencer Gulf. Of the reserved area, a very small proportion has borne timber of commercial value, the remainder having been covered for the most part with stunted vegetation. Owing to the absence of high mountain ranges and dryness of the climate, the forests are not dense. Special attention has been given in South Australia to silviculture, and great success has been achieved in clothing areas of treeless plain and hillslope with belts of young trees, such as blue, sugar and red gum, and white ironbark. In some parts the Tasmanian blue gum (*E. globulus*) flourishes, but great success has also been attained with the sugar gum (*E. corymocalyx*), a tree indigenous to the State itself. It is found chiefly in the Flinders Range, and used for railway sleepers, telegraph poles, coachbuilding, and in wharf and jetty construction. Two other eucalypts found in South Australia, the white ironbark (*E. leucocorylon*), known locally as "blue gum," and the grey box (*E. hemiphloia*) furnish strong, tough, and durable timber, inlocked in grain and suitable for the same purposes as sugar gum. The common flooded variety of red gum, which has a fairly wide distribution, being found on clay flats and along streams and water-courses, has also been grown in the plantations, but not with the same success as sugar gum. Among conifers which have been grown with fair success are the Monterey, the Maritime, Aleppo, and Stone pines. The Monterey pine (*P. insignis*) outstrips all other trees in growth, and its timber, though softer than other first-class pines, has been utilised for deal tables, packing cases, picket fencing, shelving, and generally for purposes where common deal is useful. The Maritime, Aleppo, and Stone pines are naturally of slower growth. In Europe they furnish useful timber, but in these plantations have not yet reached an age suitable for utilisation. The upright poplar (*P. fastigiata*) growing well over a large area, serves for packing cases, flooring boards, etc. The locally-grown American ash (*Fraxinus americana*) has been used in coachbuilding work, and compares well in quality with the imported American ash. The area suitable for its cultivation in South Australia is, however, very limited, as it requires favourable conditions of soil and climate.

During the last twenty-eight years the Forest Department has issued very large numbers of young plants to the public free of charge, for wind breaks, avenues, and for the shelter of homesteads and buildings generally, over eight million trees having been so distributed. Formerly, bounties were paid under the Forest Act for the encouragement of private planting of timber trees.

A substantial increase in the amounts voted for recent years has enabled great progress to be made in planting forest reserves, and a much larger area is now planted than has been the case for many years past. It is anticipated that on completion of the planting season nearly a thousand acres will have been planted. Re-afforestation by natural regeneration of a large area in the Penola State forest, under a thorough system of fire protection, has been undertaken.

(v.) *Western Australia.* A State silvicultural nursery is established at Drake's Brook, on the south-western railway, the site chosen being a ti-tree swamp, exotic trees of temperate climates being raised. The planting of the Monterey, Maritime, Aleppo, and Canary Island pines, the blue pine of the Himalayas (*P. excelsa*), the Indian cedar, Lawson's cypress, several kinds of poplar, the Virginian catalpa, white cedar, and American ash has been successful. A large number of pepper trees and sugar gums were raised, chiefly for shade purposes. The trees are sold or given away to settlers, being distributed chiefly in the goldfields region and other districts having little natural forest.

There are also two forest plantations where conifers, acacias, and sandalwood are cultivated, the trees making very healthy growth.

(vi.) *Tasmania.* There are at present only two small experimental plantations. In the State nursery a considerable area is being planted with softwoods.

Particulars regarding nurseries and plantations in 1911 are given hereunder:—

SYLVICULTURAL NURSERIES AND PLANTATIONS, 1911.

Particulars.	New South Wales.*	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.
Expenditure on plantations and upkeep of silvicultural nurseries	£1,066	£9,216	nil	£19,411	£636	£250
No. of persons engaged in nurseries	11	22	nil	20	5	2
No. of silvicultural nurseries	1	3	nil	7	1	1
Area of silvicultural nurseries	85 ac.	54 ac.	nil	7 ac.	17 ac.	5 ac.
No. of forest plantations	3	11	1	107	2	...
Area of forest plantations	180 ac.	19070 ac.	500 ac.	9684 ac.	300 ac.	...
Extent of public distribution of trees or number of trees issued	39,000	30,000	†	516,000	58,000	5000

* A small nursery has also been established at Acton, Federal Capital Territory.

† There are no forest nurseries issuing trees in Queensland, but a small number of economic and ornamental trees are issued by the Department of Agriculture.

4. Instruction in Scientific Forestry.—A Forestry School, with adequate grounds, has been established at Creswick, in Victoria. The site is near the State plantation and nursery. General class-teaching is given at the school, but the principal aim of the Forest Department is to keep practical work in the foreground. The principal class subjects, in addition to theoretical forestry, are botany, geology, physics, and land surveying, while in outside work trainees will have regular teaching and experience in the preparation of seed-beds, seed-sowing, propagation, planting out, pruning, the general care and improvement of plantations and natural forests, and the employment of timber to the best advantage. The desire is to give the prospective forester a thorough training in all branches of the work. Facilities are also afforded to members of the present forests staff to qualify in special subjects by attending winter classes. The school was opened early in 1911.

In September, 1910, an Instructor of Forestry was appointed by the South Australian Government, to assist the Conservator in forest inspection, and particularly to conduct a course in forestry at the Adelaide School of Mines.

Courses of lectures have also been given at various centres.

5. Interstate Conference of Australian Foresters.—In November, 1911, the first Australian Conference on Forestry was held at Sydney. All the States, except Western Australia, were represented. Regarding forest policy and forest legislation, it was resolved that special enactments were necessary to provide for the conservation, maintenance, and planting of forests; that such enactments, to be effective, should provide for the creation of permanent and inalienable reserves; that for efficient management, the appointment of a permanent authority, vested with statutory powers for administration and control, was demanded; and that the administration of forest and game laws could sometimes be combined with advantage and economy. Upon the subject of the education and training of forest officers, it was resolved that a high standard was essential for the successful pursuit of forestry; and that courses to give such training be held at schools founded for this purpose, and authorised to issue recognised diplomas and certificates. The resolutions regarding waste lands declared that the clothing of heath and moor lands, areas of inferior natural vegetation, etc., should be viewed as a national work; and that each State should make annual appropriations for most profitably carrying on the work. It was stated to be advisable that an association for the advancement of forestry, to be styled "The Australian Forestry League," should be formed. Other resolutions declared the necessity for immediate and concerted action in

connection with the establishment of plantations of coniferous trees and the maintenance of existing coniferous forests. Attention was also invited to the general inadequacy of the laws regarding protection of forests from fire. The preservation under permanent forest cover of all high mountain ranges which formed the sources of streams and springs was stated to be a matter of first national importance, owing to the irregular rainfall in many parts of Australia; and the Conference recommended that all high ranges which were still crown lands should be dedicated as permanent forests, strictly maintained under forest cover, and controlled under forest law.

§ 3. Commercial Uses of Principal Australian Timbers.

The uses of the more important of Australian timbers are many and various. Four varieties of ironbark, viz., white or grey (*E. paniculata*), narrow-leaved (*E. crebra*), broad-leaved (*E. siderophloia*), and red (*E. sideroxylon*) are largely used for public works, preference being given to the white and narrow-leaved varieties. These timbers are used extensively in the building of bridges and culverts, for railway sleepers and fencing posts, and for framing, naves, spokes, poles and shafts in carriage and waggon building. Ironbark beams are of great strength, hence it is largely employed for girders and joists of upper floors, especially in stores for heavy goods.¹ Another red ironbark (*E. leucorxylon*), heavy, dense, and strong, is greatly valued for bridge beams and piles. Tallowwood (*E. microcorys*) is strong, heavy, very durable, not easily split, and turns and planes well. It is used for bridge-decking, house-flooring (being peculiarly suitable for ballrooms), girders, piles, and fencing posts, and especially for paving blocks, giving even and regular wear under heavy traffic. Even better in this latter regard is blackbutt (*E. pilularis*), a fine hardwood for house and ship building, as well as street paving. Grey gum (*E. propinqua*), makes excellent railway sleepers, and is used for felloes and spokes in coach building. It makes very durable fencing posts, and is also sometimes split for shingles. Murray red gum (*E. rostrata*), the common river gum of all the eastern States, is one of the best hardwoods for use in contact with the ground, being largely used for poles, house foundations, wood paving, and railway sleepers. It is also extensively cut for mining shafts and public and municipal works. The forest variety of red gum (*E. tereticornis*) serves the same purpose as the river red gum. White mahogany (*E. acmenoides*) is used for posts, poles, girders, and similar classes of work, being an exceedingly durable timber. Red mahogany (*E. resinifera*) is largely employed for general building work, street paving, fencing, and weatherboards. It is very durable and hardens greatly with age. Grey box (*E. hemiphloia*) is very durable in contact with the ground, and is hence used for railway sleepers (lasting from thirty to thirty-five years in the track), telegraph poles, mine props, fence posts, piles, girders, and for heavy framing and naves, wheel cogs, shafts, dray poles, spokes, etc. Bairnsdale grey box (*E. bosistoana*) serves similar purposes. Brush box (*Tristania conferta*), another hard and durable wood, is used for tram rails, bullock yokes, tool handles, planes, etc. Sydney blue gum (*E. saligna*) is greatly valued by shipwrights and wheelwrights, and furnishes ships' planks, felloes of wheels, etc. It is also used for buildings, and makes very durable paving blocks. Woollybutt (*E. longifolia*) is used for house building, fencing, felloes, spokes, and wheelwrights' work generally. Being durable in contact with the ground, and resistant to heavy traffic, it is also used for street paving. Spotted gum (*E. maculata*) is one of the best hardwoods for bending, even when cold, and is therefore specially valuable in wheelwrights' and coachbuilders' work for poles, shafts, crosspieces, naves, and spokes; also for framing and house building, tram rails, ship planking, decking of bridges, and wood paving. Turpentine (*Syncarpia laurifolia*) is of a great durability in the ground or under water, being used for piles or jetties, wharves, bridges, pillars and girders of buildings, wood paving, and hewn posts and rails. Yellow stringy-bark (*E. muelleriana*) is chiefly used

1. Ironbark girders do not burn rapidly and often stand a fire when iron girders yield through the effect of the heat.

for jetty and pier work, and for fencing posts. Blue gum (*E. globulus*) is a valuable timber with straight, symmetrical bole, used for upper timbers and decking in jetty and bridge work, bridge piles, shafts, felloes, spokes and frame work of vehicles, and in general building and construction. Spotted gum (*E. goniocalyx*) furnishes a hard, heavy, and durable timber, similar in appearance to blue gum, and serving the same purposes. Yellow box (*E. melliodora*) bears a large quantity of blossom, and hence is a favourite tree with beekeepers. Its timber is used for piles and posts, squared beams, and stringers for bridges. Messmate (*E. obliqua*) is largely sawn by mills for weatherboards, studs, rafters, joists, etc., and is also used for railway sleepers and fencing posts. Stringy-barks (*E. macrorrhyncha*, *E. capitellata*, *E. piperita*) are sawn by mills into ordinary building timber, and split by settlers into posts and rails and rough building material. Mountain ash (*E. amygdalina regnans*) is sawn into building material, and is also split into palings, shingles, rails, and mining laths. Silvertop (*E. sieberiana seu virgata*)—called also Gippsland mountain ash, green top, and white ironbark—is used for ordinary building purposes, and for fencing rails and rough construction. Sugar gum (*E. corynocalyx*) is held in high repute on account of its toughness and durability, and is chiefly used for railway sleepers, telegraph poles, coach building, and in wharf and jetty construction. White or manna gum (*E. viminalis*) is not a good weather timber, but is suitable for interior construction, such as house frames and floors.

The pre-eminent timber trees of the West are jarrah (*E. marginata*) and karri (*E. diversicolor*). Jarrah is in great request for piles in jetty and bridge construction, and for railway sleepers and street paving. It also furnishes a favourite material for boat-building, fencing, and rough furniture, and makes excellent charcoal. Karri is heavy, dense, elastic, and tough, not so easily wrought as jarrah, and is used for bridge-decking, flooring, planking, spokes, felloes, shafts, and street paving. Tuart (*E. gomphocephala*) is exceedingly strong and tough, suitable for the framework of railway waggons, bridge supports, buffers, keelsons, shafts, wheelwrights' work, and generally for all purposes where great strength and hardness are necessary. The red gum (*E. calophylla*) is a fine shade tree, and is valued for the shelter it affords to cattle and sheep. Its timber, however, is not held in much esteem; but in short lengths it is employed for wheelwrights' work and agricultural implements. Its gum or kino has medicinal properties, and is also used locally for tanning hides. Wando (*E. redunca*) is used for fencing, wheelwrights' work, and railway buffers and sleepers. The blackbutt (*E. patens*), York gum (*E. loxophleba*), and yate (*E. cornuta*) of the West are largely used for fencing, building, and rough construction.

The Moreton Bay or hoop pine (*Araucaria cunninghami*) is used for interior work (flooring, ceiling, and lining boards) and for packing cases and butter boxes. Brown pine (*Podocarpus elata*) is also used for interior work, and for bridge, jetty and pier piles. Cypress pine (*Callitris*), including red or black pine (*C. calcarata*); Murray pine (*C. verrucosa*), Port Macquarie pine (*C. macleayana*), and the Richmond River cypress pine (*C. columellaris*) are used for buildings liable to attacks of white ants, being strongly resistant to these pests. Cypress pine is also suitable for bridge decking and makes good fuel. Red cedar (*Cedrela australis*) furnishes timber of great beauty; it is easily worked and very durable, and is used for furniture and cabinet-making, doors, panelling, and interior fittings generally. Rosewood (*Dysoxylon fraserianum*) is easily wrought, and is used for furniture, turnery, carving, cabinet work, mouldings, planes, window joints, house fittings, and wine casks. Red bean (*Dysoxylon muelleri*) has a finely-figured grain and is an excellent furniture wood. White beech (*Gmelina leichhardtii*) is durable and easily worked, and is in great request for decks of vessels, furniture, picture frames, carving, flooring, house-fittings, vats, casks, and general coopers' work. Silky oak (*Grevillea robusta* and *Orites excelsa*) is also in request for coopers' work, and makes handsome furniture and wainscoting. The silky oak has also been used for butter kegs, buckets, churns, etc., and makes good butter boxes for the local markets. Black bean (*Castanospermum australe*), or Moreton Bay chestnut, is used for furniture, cabinet-making, and gun stocks. Tulip-wood (*Harpulia pendula*) is highly esteemed for

cabinet-work, being used for door panels, dadoes, and billiard tables. Coachwood (*Ceratopetalum apetalum*) is suitable for boat-building, cabinet-work, and coach-building. Kauri pine (*Agathis palmerstoni*) gives a light, strong, and durable timber, and is used for general building and construction, wainscoting, furniture and joinery, railway carriages, and ship-decking. Blackwood (*Acacia melanoxylon*) is very strong and durable, diminishing, however, greatly in weight in seasoning, though shrinking very little in volume. Figured blackwood is a beautiful timber; it is used for furniture, such as billiard tables, chairs, secretaïres, casings of pianofortes and organs, and general cabinet work; dadoes, panelling of railway carriages, boat-building, picture frames, wheel naves, gun stocks, walking sticks, and a great variety of useful and ornamental purposes; it is also split into staves for wine and tallow casks. Evergreen beech (*Fagus cunninghami*) yields also a handsome timber, used for furniture, sashes and doors, light joinery, wood-carving, picture frames, and cog-wheels. Huon pine furnishes a fine, strong, and light timber; it is almost indestructible in water, and hence is largely used for boat planking; its beautiful grain brings it into request for furniture, panelling, and wainscoting. The King William variety is very tough, being used for racing sculls; it is also a favourite timber in joiners' work. Celery-top pine is strong and heavy, suitable for furniture, flooring, house frames, coopers' work, and masts. Other Australian brush timbers of minor importance are sassafras (*Atherosperma moschatum*), used for saddle-trees and boot lasts; and satin box, sycamore, olive, and pencil-wood, giving woods of beautiful grain for parquetry, veneers, carving, and picture frames. The sandalwood of Western Australia (*Santalum cygnorum*) is a very valuable forest product, and has been exported in varying amounts during the last fifty years.

As aids in the development of Commonwealth industries, the Government is experimenting with Australian woods for rifle stocks, telephone switch boards, etc. It has also made available a sum of money for the seasoning and storing of Australian timber. It is intended to establish seasoning depôts at the Federal Capital, and also at the principal centres in the various States, whence contractors will be able to obtain timber at scheduled rates. Other timber seasoning works have been established by State and private enterprise.

§ 4. Forestal Industries and Production.

1. **Timber.**—Estimates of the quantity and value of timber cut and sawn have been prepared by the States Forestry Departments, and are as follows:—

QUANTITIES OF LOCAL TIMBER SAWN OR HEWN IN EACH STATE OF THE COMMONWEALTH DURING THE YEARS 1907 to 1911.

State.	1907.	1908.	1909.	1910.	1911.
	Sup. feet.	Sup. feet.	Sup. feet.	Sup. feet.	Sup. feet.
New South Wales	122,998,000	123,152,000	134,070,000	138,845,000	142,358,000
Victoria	55,873,000	54,602,000	50,000,000	51,000,000	53,000,000
Queensland	91,752,000	100,760,000	108,391,000	116,438,000	138,696,000
South Australia	143,000	436,000	240,500	210,000	217,000
Western Australia	110,395,000	165,766,000	171,825,000	174,528,000	191,114,000
Tasmania	35,228,000	44,335,000	45,035,000	54,933,000	66,061,000
Commonwealth	416,889,000	489,051,000	509,561,500	535,954,000	591,646,000

The only States for which annual returns are furnished of the value of locally sawn or hewn timber are South Australia and Tasmania. The values returned for South Australia for the years 1907 to 1911 are respectively, £815; £1084; £411; £330; and £383.* For Tasmania the values for the years 1907 to 1910 are respectively, £110,689; £93,762;

* It is, of course, evident that the value of production was much greater than this.

£138,492; and £194,106. The estimate for New South Wales for 1907, is £1,440,000; for 1908, £763,241; for 1909, £801,456; and for 1910, £891,111. For Victoria, the output of timber, from forest sawmills only, was £181,590 in 1907; £177,460 in 1908; £189,130 in 1909; £248,315 in 1910; and £265,990 in 1911. The output of Western Australian sawmills was valued at £763,241 in 1908; £1,105,108 in 1909; £681,213 in 1910; and £852,128 in 1911. For Queensland the value for 1908 was £665,350; for 1909, £736,578; for 1910, £858,741; and for 1911, £1,098,173.

2. Forest Produce.—Estimates made of the total value of forest production must be regarded as mere approximations. Many of the items are not available. Large returns are credited to firewood, but these are subject to a wide range of uncertainty.

§ 5. Oversea Trade.

1. Imports.—The quantity and value of timber imports during the four years 1908 to 1911 inclusive are shewn according to countries of origin in the following tables:—

IMPORTS OF DRESSED TIMBER, COMMONWEALTH, 1908 to 1911.

Country of Origin.	Quantity.*				Value.			
	1908.	1909.	1910.	1911.	1908.	1909.	1910.	1911.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom ...	11,853	14,003	12,012	6,350	334	298	409	177
New Zealand ...	32,704	...	2,304	6,291	432	...	30	86
Other British Poss. ...	...	49,598	39,489	46,375	...	602	633	227
Norway ...	35,655,292	41,759,024	48,465,404	59,396,352	228,322	258,061	338,924	446,180
Sweden ...	7,623,737	12,104,559	13,648,238	27,249,978	50,356	84,752	100,966	201,142
United States ...	1,661,590	1,861,253	1,747,748	1,812,235	20,079	15,985	21,510	23,099
Other For. Countries	220,821	541,804	231,960	399,696	2,000	4,757	4,280	8,855
Total ...	45,205,997	55,830,241	64,147,155	88,917,337	301,523	364,455	466,754	674,716

* Exclusive of timber not measured in super. feet.

IMPORTS OF UNDRESSED TIMBER, INCLUDING LOGS, COMMONWEALTH, 1908 to 1911.

Country of Origin.	Quantity.*				Value.			
	1908.	1909.	1910.	1911.	1908.	1909.	1910.	1911.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom ...	40,848	54,075	65,420	97,485	750	902	738	1,509
Canada ...	8,612,606	16,999,515	15,585,078	25,806,593	36,020	74,133	68,308	110,238
India ...	343,674	77,674	483,635	826,240	11,085	2,613	13,604	15,373
New Zealand ...	82,034,209	69,959,470	70,604,559	85,383,540	498,087	458,456	416,630	571,979
Straits Settlements	135,871	231,025	295,525	313,443	745	1,254	1,799	1,658
Other British Poss.	62,858	111,592	75,033	267,545	1,447	1,086	909	2,922
Japan ...	9,199,839	6,990,717	7,138,554	13,218,773	34,429	28,590	29,127	62,552
Java ...	805,284	479,055	64,459	324,630	12,999	1,959	1,244	5,765
Norway ...	5,007,451	3,894,852	6,104,204	5,798,584	31,997	26,228	43,065	45,165
Russia ...	8,851,925	6,597,627	14,878,825	21,641,285	51,045	37,147	83,408	138,645
Sweden ...	4,229,960	4,741,846	6,506,762	6,093,004	29,693	44,187	44,378	40,459
United States ...	147,463,309	101,434,431	156,219,083	193,949,570	754,780	531,116	835,614	987,016
Other For. Ctries	259,727	233,204	653,617	507,182	2,508	2,020	3,354	4,011
Total...	267,047,561	211,805,083	278,674,754	354,227,874	1,465,585	1,209,691	1,542,178	1,985,292

* Exclusive of timber not measured in super. feet.

2. **Exports.**—The quantity and value of undressed (sawn) timber exported from 1907 to 1911 is given below, the countries of destination being also shown.

The year 1907 shewed considerable decrease in comparison with previous years, both in quantity and value, but the export was again heavy in subsequent years.

EXPORTS OF UNDRESSED TIMBER (SAWN), COMMONWEALTH, 1907 to 1911.

Country to which Exported.	Quantity.*					Value.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
	1000 Sup. ft.	1000 Sup. ft.	1000 Sup. ft.	1000 Sup. ft.	1000 Sup. ft.	£	£	£	£	£
United Kingdom...	14,156	20,760	21,689	10,879	10,436	88,010	139,223	151,724	77,003	77,070
Canada ...	368	1,314	492	610	546	4,240	13,143	5,267	7,038	6,640
S. African Union ...	6,503	1,104	3,763	11,687	19,243	36,693	7,234	24,712	80,223	132,094
Ceylon ...	21	8	2,235	303	611	211	23	14,864	1,833	4,110
Fiji ...	1,899	1,523	1,305	1,994	1,900	12,144	10,783	7,950	13,392	12,416
India ...	40,304	39,935	55,337	44,852	52,254	266,801	276,521	364,430	300,411	353,488
Mauritius ...	6	241	8	525	278	66	1,606	75	3,533	2,138
New Zealand ...	22,210	36,664	25,424	20,766	27,137	151,985	248,636	172,705	147,314	199,666
Ocean Island ...	705	974	416	268	120	5,579	7,914	3,296	1,605	768
Papua ...	94	...	160	357	435	899	1,146	1,366	3,497	4,223
Straits Settlements	254	1,898	601	52	52	1,909	9,943	3,877	320	390
Other British Pos.	506	4,743	4,022	2,643	103	2,777	30,282	29,702	19,651	774
Argentine Republ.	1,142	1,590	1,134	3,007	2,474	7,618	10,594	7,499	19,797	16,492
Belgium ...	1,286	2,515	1,820	3,535	2,887	7,659	19,613	12,154	24,870	21,665
China ...	2,845	2,373	7,263	409	2,138	19,397	12,370	26,595	2,693	14,250
Egypt ...	91	7,831	10,176	15,708	7,289	635	52,207	62,096	104,600	48,594
Germany ...	2,199	4,616	2,027	1,944	1,829	19,824	37,354	17,987	18,555	18,122
Japan ...	527	333	73	25	36	5,329	2,889	484	517	354
Kaiser Wilhelm L.	65	26	75	43	79	475	199	556	333	648
Marshall Islands...	562	460	162	229	226	4,177	3,770	1,325	1,643	2,023
Netherlands ...	869	245	35	...	3	2,854	1,660	266	...	26
New Pommern ...	170	204	311	562	372	1,242	1,454	2,504	4,838	3,498
New Caledonia ...	147	190	118	441	355	912	1,415	949	3,511	3,096
Philippine Islands	10,589	4,818	306	3,252	2,941	64,426	30,849	3,372	21,132	19,608
Port'guese E. Africa	825	1,296	3,539	4,720	2,639	5,039	7,720	24,230	31,036	17,416
South Sea Islands	...	...	...	...	...	...	...	...	...	...
(so described) ...	421	248	337	388	631	3,233	2,069	2,965	3,247	5,590
U.S. of America ...	799	416	659	2,501	4,907	7,248	3,633	7,703	12,693	25,032
Uruguay ...	4,815	9,300	3,894	6,240	1,888	32,073	62,003	25,963	41,596	12,589
Other For. Count.	967	334	648	4,863	2,715	6,669	2,642	5,164	29,674	16,948
Total ...	115,347	145,954	148,064	142,824	146,524	760,124	999,200	981,770	976,355	1,019,648

* Exclusive of timber not measured in super. feet.

QUANTITIES OF TIMBER IMPORTED INTO, AND EXPORTED FROM, THE COMMONWEALTH, 1907 to 1911.

Description.	1907.	1908.	1909.	1910.	1911.
IMPORTS.					
Veneers ... Sup. feet	...	235,319	296,801	599,178	994,575
Dressed ... "	62,431,784	48,104,666	57,924,923	65,609,803	90,672,703
Undressed ... "	207,579,407	250,465,749	200,469,213	257,007,893	324,325,658
Logs ... "	12,451,619	16,581,812	11,335,870	21,666,861	29,902,216
Palings ... No.	...	...	...	...	...
Pickets ... "	1,106,364	1,461,726	1,226,082	2,123,398	1,523,849
Shingles ... "	2,079,041	830,960	1,270,476	690,710	937,270
Staves—Dressed, etc.	1,470,765	62,804	4,600	600	5,440
Undressed ...	...	1,610,571	2,390,888	3,929,063	3,363,457
Laths for blinds ...	19,966,870	21,660,183	25,692,686	38,564,512	30,213,094
" other ...	...	1,595,127	659,298	835,400	1,916,045
Spokes, rims, felloes ...	975	386	4	2	234
Doors ...	...	...	...	...	...
Architraves, mouldings, etc. ... Lin. feet	65,581	34,175	29,725	9,045	23,601
Other ...	...	...	...	...	...

* Quantity not available.

QUANTITIES OF TIMBER IMPORTED AND EXPORTED, ETC.—Continued.

Description.	1907.	1908.	1909.	1910.	1911.
EXPORTS.					
Veneers ...	...	...	...	...	...
Dressed ... Sup. feet	669,647	701,801	1,280,703	990,924	1,071,683
Undressed ...	115,347,179	145,953,614	148,063,541	142,833,520	146,262,683
Logs ...	4,261,379	3,326,259	4,254,472	2,195,219	3,252,115
Palings ... No.	730,825	826,900	718,550	608,602	942,220
Pickets ...	7,147	6,050	3,000	19,570	6,628
Shingles ...	33,312	47,100	12,944	100,540	35,790
Staves—Dressed, etc.	...	...	90	5,000	1,300
Undressed	...	911	...	1,267	...
Laths for blinds	...	*	*	*	*
other	1,571,705	1,056,781	14,240	677,280	110,900
Spokes, rims, fellows	...	*	*	*	*
Doors ...	1,338	*	*	*	*
Architraves, mouldings, etc. ... Lin. feet	50,616	46,848	90,458	94,054	92,162
Other ...	*	...	...	...	...

EXCESS OF IMPORTS OVER EXPORTS.

Veneers ...	...	235,319	296,801	599,178	994,575
Dressed ... Sup. feet	61,762,137	47,402,865	56,644,220	64,618,879	89,601,025
Undressed ...	92,232,228	104,512,135	52,405,672	114,174,373	178,062,975
Logs ...	8,190,240	13,255,553	7,081,398	19,471,642	26,650,101
Palings ... No.	—730,825	—826,900	—718,550	—608,602	—942,220
Pickets ...	1,099,217	1,455,676	1,223,032	2,104,428	1,517,221
Shingles ...	2,040,729	783,860	1,257,532	590,170	901,480
Staves—Dressed, etc.	...	...	4,510	—4,400	4,140
Undressed	1,470,765	1,609,660	2,390,798	3,927,796	3,363,457
Laths for blinds	...	*	*	*	*
other	18,395,165	20,603,402	25,678,446	37,897,232	30,102,194
Spokes, rims, fellows	...	*	*	*	*
Doors ...	—363	*	*	*	*
Architraves, mouldings, etc. ... Lin. feet	14,965	—12,925	—60,733	—85,009	—68,561
Other ...	*	*	*	*	*

* Quantity not available.

Note. — signifies excess of exports over imports.

VALUE OF TIMBER IMPORTED INTO AND EXPORTED FROM THE COMMONWEALTH, 1907 to 1911.

Description.	1907.	1908.	1909.	1910.	1911.
IMPORTS.					
Veneers ...	...	£ 8,289	£ 8,778	£ 14,814	£ 25,795
Dressed ...	376,605	324,997	376,732	478,162	683,430
Undressed ...	1,141,199	1,388,224	1,158,445	1,432,301	1,819,832
Logs ...	34,966	77,361	51,246	109,877	165,460
Palings ...	...	...	...	...	...
Pickets ...	3,748	6,174	4,117	8,804	5,622
Shingles ...	2,987	913	1,873	851	1,280
Staves—Dressed, etc.	...	1,173	342	145	•181
Undressed	13,326	14,215	18,178	24,542	20,417
Laths for blinds	...	44	83	24	38
other	18,118	16,547	20,970	28,397	23,181
Spokes, rims, fellows	...	35,976	12,408	17,297	40,047
Doors ...	438	251	1	1	137
Architraves, mouldings, etc.	439	156	59	29	65
Other ...	40,617	20,271	588	136	129
Total value	1,632,493	1,894,591	1,653,820	2,115,380	2,785,564

VALUE OF TIMBER IMPORTED AND EXPORTED, ETC.—Continued.

Description.	1907.	1908.	1909.	1910.	1911.
EXPORTS.					
	£	£	£	£	£
Veneers ...	...	...	...	...	...
Dressed ...	6,608	7,438	12,104	11,396	12,599
Undressed ...	760,124	999,200	981,770	976,355	1,016,510
Logs ...	22,475	18,611	23,690	16,768	23,024
Palings ...	3,541	4,227	3,449	3,106	4,931
Pickets ...	66	52	26	176	84
Shingles ...	108	125	29	210	91
Staves—Dressed, etc. ...	...	111	1	52	16
Undressed ...	...	17	...	68	...
Laths for blinds ...	...	1,073	1,179	1,136	946
" Other ...	1,706	1,139	20	708	105
Spokes, rims, felloes ...	...	6,131	5,191	8,687	9,989
Doors ...	1,027	732	991	759	743
Architraves, mouldings, etc. ...	354	258	511	623	589
Other ...	9,129	...	...	...	...
Total value ...	805,133	1,039,114	1,028,961	1,020,044	1,069,627

EXCESS OF IMPORTS OVER EXPORTS.

Veneers ...	...	8,289	8,778	14,814	25,795
Dressed ...	370,002	317,559	364,628	466,766	670,831
Undressed ...	381,075	389,024	176,675	455,946	803,322
Logs ...	12,491	58,750	27,556	93,109	142,436
Palings ...	—3,541	—4,227	—3,449	—3,106	—4,931
Pickets ...	3,682	6,122	4,091	8,628	5,538
Shingles ...	2,879	788	1,844	641	1,189
Staves—Dressed, etc. ...	...	1,062	341	93	115
Undressed ...	13,326	14,198	18,178	24,474	20,417
Laths for blinds ...	...	—1,029	—1,096	—1,112	—908
" other ...	16,412	15,408	20,950	27,689	23,076
Spokes, rims, felloes ...	...	29,845	7,217	8,610	30,058
Doors ...	—589	—481	—990	—758	—606
Architraves, mouldings, etc. ...	135	—102	—452	—594	—524
Other ...	31,488	20,271	588	136	129
Total value ...	827,360	855,477	624,859	1,095,336	1,715,937

Note. — signifies excess of exports over imports.

The exports of sandalwood were:—

EXPORTS OF SANDALWOOD, 1907 to 1911.

Country to which Exported.	Quantity.					Value.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
Hong Kong ...	140,586	158,444	54,387	141,646	120,432	50,903	65,037	25,546	71,672	62,566
Straits Settlements ...	7,284	1,484	12,890	7,378	13,783	2,542	589	5,036	3,319	5,967
Other British Possessions ...	4,593	14,680	5,163	15,223	5,687	1,803	5,604	2,358	6,301	2,506
China ...	31,637	17,560	31,649	19,399	7,140	10,886	6,238	12,180	7,332	2,348
Other Foreign Countries ...	312	...	...	...	6	103	...	...	...	9
Total ...	184,412	192,168	104,069	183,646	147,048	66,237	77,468	45,120	88,624	73,396

Tanning bark is largely exported from the Commonwealth, as the following table shows:—

EXPORTS OF TANNING BARK, 1907 to 1911.

Country to which Exported.	Quantity.					Value.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
United Kingdom ...	35,808	5,878	19,424	12,159	3,154	12,976	1,762	8,188	4,674	1,195
New Zealand ...	67,541	72,933	69,137	55,838	66,574	29,160	31,637	31,414	25,036	29,105
Other British Poss. ...	462	1,655	1,745	1,868	1,868	214	793	902	860	921
Belgium ...	27,011	25,154	15,910	40,556	29,100	10,241	9,432	5,966	15,815	11,576
France ...	424	328	206	837	204	192	167	105	319	101
Germany ...	223,740	142,382	114,128	179,119	148,490	78,352	53,329	43,063	70,442	60,121
Other For. Countries ...	3,181	12,034	5,322	5,239	4,166	1,207	5,270	2,307	2,108	1,627
Total ...	358,167	260,364	225,872	295,616	253,556	132,342	102,410	91,945	119,254	104,646

QUANTITIES AND VALUES OF BARK IMPORTED INTO, AND EXPORTED FROM, THE COMMONWEALTH, 1907 to 1911.

Particulars.	1907.	1908.	1909.	1910.	1911.
	cwt.	cwt.	cwt.	cwt.	cwt.
QUANTITIES—					
Imports ...	344	38,711	28,020	12,648	72,447
Exports ...	358,167	260,364	225,872	295,616	253,556
Excess of exports over imports	357,823	221,653	197,852	282,968	181,109
	£	£	£	£	£
VALUES—					
Imports ...	156	16,289	12,774	5,461	31,253
Exports ...	132,342	102,410	91,945	119,254	104,646
Excess of exports over imports	132,186	86,121	79,171	113,793	73,398

SECTION XI.

FISHERIES AND PISCICULTURE.

§ 1. Commercial Fisheries.

1. **Early Fishing Excursions of Malays.**—Economic fisheries in Australia date back to a period long before the exploration of the northern and north-western shores of the continent by Tasman and Dampier. The Malays of Macassar, in their proas, made fishing excursions amongst the reefs and shoals skirting the coast, collecting and curing trepang or *bêche-de-mer*, a practice continued up to the present time. They arrive ordinarily at the beginning of the north-west monsoon, and return to Macassar after a few weeks, as the south-east monsoon sets in. In addition to collecting trepang, the Malays barter rice, tobacco, bright coloured handkerchiefs, etc., for tortoise shell, pearlshell, and seed pearls collected by the aborigines.

2. **Fish Stocks.**—Australasia, extending from 10° to 45° south latitude, possesses an abundant and varied fish fauna, which embraces both tropical and temperate varieties and includes destructive as well as edible species. In rivers and lakes both indigenous and imported varieties thrive. The latter have been introduced and acclimatised for industrial and sporting purposes by Governments and angling societies. Exploitation of the fishing areas—for some classes of fish for the whole year, for others during the breeding season only, or until a certain size is attained—is, where necessary, expressly forbidden; proclaimed localities are closed against net-fishing, and a minimum size of mesh for nets is sometimes fixed. The sea-fishermen in some districts have made regulations in their own interests for the purpose of controlling the market supply, and these they rigorously observe.

3. **Economic Fisheries.**—Australia's food fishes, though abundant, have not led to the development of an industry of national importance, though fresh and salt water fisheries pay handsomely in other countries, and could no doubt do so in Australia. It has been authoritatively asserted that:—"The collection and distribution of the knowledge of the world's work in fish-culture would make an acre of water more valuable than an acre of land, and the toilers of the sea could reap manifold their present harvest." This would involve also better arrangements for the distribution of fish than exist at present. Official reports state that the possession of scientific knowledge by the fishermen would greatly benefit the industry.

4. **Lake and River Fishing.**—Lake and river fishing take even lower industrial rank than marine fishing, though local catches furnish on the aggregate a not inconsiderable amount of food supply.

5. **Distribution of Supplies.**—Present methods of distribution impose serious difficulties on the development of fishing generally, since there is a wide divergence between the price paid by the consumer and the return received by the producer.

State Governments are interesting themselves in the direction of more economic distribution, while municipal oversight has been undertaken in Sydney and is proposed in other capitals. It is anticipated that an efficient system of fish supply to private customers will soon be established in the chief centres of population, where good markets are assured for regular deliveries of fresh fish.

6. Oyster Fisheries.—Natural oyster beds, whose ample product is of excellent quality, exist on the foreshores in the shallow waters of inlets and estuaries in several parts of Australia. By husbanding the natural crop, and by judicious transplanting, the oyster output has been very materially augmented, and it is believed that there is a great future for the industry. The areas are leased by the Government to private persons, lengths of foreshore being taken up and profitably exploited. In New South Wales particularly, the industry has developed recently, and satisfactory experiments have been conducted in Victoria. In Queensland, the methodical cultivation of the beds has proved of great benefit to cultivators, besides improving the class of oyster marketed.

7. Pearl-shelling.—Pearl-shelling is carried on in the tropical districts of Queensland, the Northern Territory, and Western Australia. The pearl oyster inhabits the northern and western coasts from Cape York to Shark Bay, a length of shore of over 2000 miles. Along the north coast the pearls taken are small, and their aggregate value inconsiderable; but the shells are marketed in considerable quantities, the industry giving directly and indirectly employment to a large number of people, mostly Japanese, Chinese, and Malays. The Shark Bay pearling industry, however, is carried on for both gems and shells. The fishing is generally conducted with the aid of diving apparatus, in water varying from four to twenty fathoms in depth. The inshore banks and shallower waters have been almost entirely worked out, and the deeper waters, from three to twenty miles off shore, are now being worked.

In tropical Queensland pearl-shell diving is actively pursued, and is by far the most important of fishing industries, Torres Straits being the centre of production. With it the pursuit of *bêche-de-mer* is carried on, and tortoiseshell is obtained on the coasts. The industry is supervised by the Marine Department, which administers the Fisheries Acts. A statutory limit is fixed for the minimum size of shell that may be gathered. Experiments have been made in cultivating the pearl oyster on suitable banks. A small variety has been discovered at Stradbroke Island, in Moreton Bay, but the commercial value of the produce is unimportant. In 1909, a pearl of $32\frac{1}{2}$ grains weight, of great beauty and fine quality, and valued at £1000, was obtained from the Thursday Island Fisheries.

The discovery of mother-of-pearl shell in Darwin Harbour in 1884 caused a rush of pearling boats from Torres Straits. But the muddiness of the water, rendered almost opaque by the heavy tides, prevented the divers from satisfactorily working the area, and led to the abandonment of the industry within three years of its birth. Prospecting in new patches has lately been carried out and the industry has been revived. In addition to pearl and trepang fishing, dry-salted fish is also exported from the Territory.

In Western Australia the centres of the industry are Broome, Cossack, Onslow, and Shark Bay. There are two distinct species of mother-of-pearl shell exported. The principal trade is done in the large shell (*Meleagrina margaritifera*), limited in distribution to tropical waters and extending in habitat from Exmouth Gulf northwards. It is used for the larger manufactured articles, such as dessert and fish knife and fork handles, large buttons, and inlaid work. The largest and finest pearls are obtained from it. The second species is that known commercially as the Shark Bay variety (*Meleagrina imbricata*). It is of smaller size and used chiefly for the manufacture of small buttons. The pearls found are of varying value. The Shark Bay pearlshell is collected by dredging in the deeper waters and gathering by hand from the shallow banks at low tide. In October, 1911, a pearl weighing 178 grains, and valued at £3000, was obtained at Broome.

The system of licensing boats and men engaged in the pearling industry restricts, in the States where it is in force, indiscriminate exploiting of the areas, and returns a small revenue.

Poaching in Australian territorial waters has long been rife, particularly on the north-west coast. Recently the Commonwealth Customs Department arranged with the Celebes Islands Government for administering a check. One of the vessels of the Australasian Squadron searched the coast for poachers during a cruise, and it is believed that the evil has been almost entirely eradicated.

In accordance with the "White Australia" policy, it has been determined that the employment of coloured labour in the pearl-shelling industry shall be restricted, and ultimately cease altogether. After 31st December, 1913, permits to indent Asiatics for the pearling fleet will cease, and all divers and tenders employed upon the luggers must be white men. Arrangements have been made for the introduction of experienced divers from England. In 1912, eleven ex-naval men arrived at Perth from London, under engagement as linesmen and divers at Broome. Further relays for Broome and Thursday Island are being sent out. It is believed that practical difficulties which may arise in the transition period will be overcome. In March, 1912, the Commonwealth Government appointed a Royal Commission to inquire into the pearling industry generally, and particularly as regards its labour problems. The Commission commenced its work at Cairns, Queensland, on 30th April, 1912, and has taken evidence of a valuable nature in various centres.

The heavy mortality amongst divers has led to suggestions for their medical inspection, and for the establishment of a diving school subsidised by the Government for training white divers.

§ 2. Fisheries Statistics.

1. **Estimates for the Commonwealth.**—The returns given below have been furnished by the State departments. Estimates and approximations, where shewn, are official. The data do not generally lend themselves to presentation on a uniform scheme, but the principal facts have been compiled as far as possible for the Commonwealth.

GENERAL FISHERIES (EXCLUDING EDIBLE OYSTERS, PEARLSHELL AND BÊCHE-DE-MER), COMMONWEALTH, 1911.

State.	No. of Boats Engaged.	Value of Boats and Equip-ment.	No. of Men Em-ployed.	Total Take of		Value of Take.	
				Fish.	Lobsters.	Fish.	Lobsters.
	No.	£	No.	cwt.	doz.	£	£
New South Wales ...	567	25,585	1,075	128,624	14,279	139,585	6,426
Victoria ...	725	43,811	1,112	88,584	34,435	61,183	8,492
Queensland...	264	10,771	488	36,800	...	36,182	...
South Australia ...	722	30,000	1,088	96,000	11,000	164,728	5,000
Western Australia	217	16,000	435	*	16,000	60,000	4,800
Tasmania† ...	95	5,000	197	†	7,167	11,324	3,000
Northern Territory ...	3	550	10	820	...	1,025	...
Commonwealth ...	2,593	131,717	4,405	350,828§	82,881	474,027	27,718

* Figures not available. † Returns incomplete; refer mainly to Hobart. ‡ 69,928 dozen.
§ Exclusive of Western Australia and Tasmania.

EDIBLE OYSTER-FISHERIES, COMMONWEALTH, 1911.

State.	Number of Boats Engaged.	Value of Boats and Equip-ment.	Number of Men Em-ployed.	Number of Leases.	Length of Foreshore in Leases.	Oysters Taken.	
						Quantity.	Value.
	No.	£	No.	No.	Miles.	cwt.	£
New South Wales ...	363	9,714	431	2,003	444	36,655	42,106
Victoria ...	...	...	...	...	...	...	...
Queensland...	114	8,462	149	682	*	27,030	33,586
South Australia ...	5	640	9	*	15†	712	1,388
Western Australia ...	...	...	...	...	...	...	...
Tasmania ...	...	...	...	...	...	...	...
Northern Territory ...	...	...	...	...	...	...	...
Commonwealth ...	482	18,816	589	2,685†	*	64,397	77,080

* Figures not available. † 1907 figures; returns for later years not available.

‡ Exclusive of South Australia.

PEARL, PEARLSHELL, AND BECHE-DE-MER FISHERIES, COMMONWEALTH, 1911.

State.	Number of Boats En-gaged.	Value of Boats and Equip-ment.	Number of Men Em-ployed.	Quantity of Pearlshe'll obtained.	Value of Pearlshe'll obtained.	Value of Pearls ob-tained.	Value of Béche-de-mer ob-tained.	Quantity of Tor-toiseshell ob-tained.	Value of Tor-toiseshell ob-tained.
	No.	£	No.	Tons.	£	£	£	lbs.	£
N.S.W. ...	...	...	...	...	...	...	...	...	...
Victoria ...	...	...	...	...	...	...	...	...	...
Q'sland ...	188	59,000	1,347	457	84,545	12,151	16,370	916	474
S. Aust. ...	...	...	...	...	...	...	...	...	...
W. Aust. ...	360	177,401	2,519	1,189	227,233	75,562	...	...	...
Tas. ...	...	...	...	...	...	...	...	...	...
N. Terr. ...	30	7,820	186	71	15,666	...	1,342	140	98
C'wlth.	578	244,221	4,052	1,717	327,444	87,713	17,712	1,056	572

PUBLIC REVENUE FROM FISHERIES, COMMONWEALTH, 1911.

State.	Licenses.	Leases.	Fines and Forfeitures.	Other Sources.	Total.
	£	£	£	£	£
New South Wales ...	1,038	6,437	187	292	7,954
Victoria ...	...	...	...	...	...
Queensland...	2,014	4,623	29	...	6,666
South Australia ...	363	...	2	...	365
Western Australia ...	880	523	124	74	1,601
Tasmania* ...	534	...	3	20	557
Northern Territory ...	4	...	...	...	4
Commonwealth ...	4,833	11,583	345	386	17,147

* Returns incomplete; refer mainly to Fisheries Board of Hobart.

GENERAL AND OYSTER FISHERIES, COMMONWEALTH, 1907 to 1911.

Particulars.	1907.	1908.	1909.	1910.	1911.
General Fisheries—					
No. of boats engaged ...	2,740	3,063	3,101	3,088	2,593
„ men employed ...	4,722	5,107	5,492	5,515	4,405
Fish obtained—					
Quantity ... cwt.	265,650	289,820	298,351	341,659†	350,828§
Value... .. £	222,000	259,392	276,672	381,182	474,027
Lobsters obtained—Value, £	11,460	16,163	16,078	22,172	27,718
Edible Oyster Fisheries—					
No. of boats engaged* ...	153	139	139	113	482
„ men employed* ...	218	196	175	174	589
Oysters obtained—					
Quantity ... cwt.	79,832	57,590	59,109†	59,854	64,397
Value £	63,438	61,900	63,192†	60,769	77,080
Public Revenue from Fisheries					
Licenses £	8,419	8,891	8,812	5,496	4,833
Leases £	6,699	7,001	7,446	9,842	11,583
Fines and forfeitures	£ 208	168	142	180	345
Other sources £	503	885	649	742	386
Total revenue	£ 15,829	16,945	17,049	16,260	17,147

* Queensland and South Australia only for years 1907 to 1910. There are practically no oyster fisheries in Victoria, Western Australia, and Tasmania. † New South Wales and Queensland only. ‡ Exclusive of Tasmania. § Exclusive of Western Australia and Tasmania.

PEARL, PEARL-SHELL AND BECHE-DE-MER FISHERIES, COMMONWEALTH,*
1907 to 1911.

Particulars.	1907.	1908.	1909.	1910.	1911.
No. of boats engaged ...	625	604	567	586	578
No. of men employed ...	3,920	3,852	3,883	4,038	4,052
Pearlshell obtained—					
Quantity ... tons	2,034	1,768	1,770	1,853	1,717
Value £	249,115	219,098	270,256	299,143	327,444
Pearls obtained †—					
Value £	64,890	49,225	77,788	94,768	87,713
Bêche-de-mer obtained—					
Quantity ... tons	358	346	352	251	323
Value £	30,931	22,903	16,410	14,088	17,712
Tortoiseshell obtained—					
Quantity ... lbs.	3,437	5,056	3,532	2,070	1,056
Value £	2,042	2,776	1,739	998	572

* Queensland, Northern Territory and Western Australia only. There is no production in the other States.

† As returned.

2. State Fisheries Statistics.—(i.) *New South Wales.* From 1904 to 1906 the average numbers of men and boats employed in general fisheries were respectively 1730 and 849; the average annual quantity of fish marketed was nearly six million pounds. More recently the estimated number of men employed has exceeded 2300, working

upwards of 1200 boats. In 1911, however, there was a falling-off. In 1907 the take of fish was 124,078 baskets, averaging 75 lbs. each. In 1908 the take was 134,437 baskets of fish, 11,031 dozen lobsters, and 3478 baskets (80 lbs. each) of prawns. In 1909 the take was 142,573 baskets of fish, 8497 dozen lobsters, and 6762 baskets of prawns; in 1910, 130,000 cwt. of fish, and 11,100 dozen lobsters, and in 1911, 128,624 cwt. of fish, and 14,279 dozen lobsters. The approximate value in 1907 was £64,000, in 1908 £72,760, in 1909 £74,000, in 1910 £126,765, and in 1911 £146,000. The fisheries revenue over a series of years averaged £6000 annually, amounting to £6626 in 1908, £6782 in 1909, £7071 in 1910, and £7954 in 1911.

Considerable portions of the foreshores and shallow areas of the river estuaries are excellent natural oyster-beds, and with constant attention the annual yield of oysters could no doubt be materially increased. In 1907 the oyster leases covered 65 acres of deep water, and 553,975 yards of foreshore, and the yield was 14,406 bags, valued at £25,210. In 1908 there were leased 72 acres of deep water, and 597,495 yards of foreshore, from which 20,590 bags, value £26,900, were taken. The foreshore leased in 1909 was 662,135 yards, the take being 15,538 bags, valued at £27,192. Leases were not quite so extensive in 1910, 651,200 yards representing the foreshore worked, the produce being nearly 30,000 cwt., valued at £30,000. In 1911, the leases were 781,440 yards, from which were gathered 36,655 cwt., valued at £42,106.

(ii.) *Victoria.* In 1908 a Fisheries Inquiries Board investigated the conditions of the fishing industry in Victoria. The scope of the inquiry covered questions as to the permanent and temporary closing of areas against fishing; the length and number of nets to be used by any one party; poaching; the destruction of cormorants; the appointment of local inspectors; adequate punishment for offences against the Fisheries Act; trawling and long line fishing experiments; and the handling, freight, and marketing of fish. Some of the recommendations of the Board were given effect to, others are still under consideration. The Fisheries Branch was, in 1909, transferred from the Public Works to the Agricultural Department, with a view to its reorganisation on the lines suggested in the Board's report. In April, 1913, legislation will begin to operate which is expected to result in the industry being immediately benefited. The number of boats engaged in the industry averages 700 over a series of years, and of men 1100. The take in 1907 was 99,707 cwt. of fish, valued at £60,442; and 24,889 dozen lobsters, valued at £6179. In 1908 it was 93,899 cwt. of fish, valued at £65,184; and 27,127 dozen lobsters, valued at £6726. In 1909 the take was 97,933 cwt. of fish, valued at £67,698; and 29,962 dozen lobsters, valued at £7403, in 1910, 93,243 cwt. of fish, valued at £64,706; and 32,059 dozen lobsters, valued at £7881; and in 1911, 88,584 cwt. of fish, valued at £61,183; and 34,435 doz. lobsters valued at £8492. Licenses to net in certain waters are issued, and these will become annual under the new Act. In 1907 legal proceedings, which called attention to the fact that the necessary licenses had not been taken out in many cases, resulted in a large increase in the issue. There is no separate revenue credited to fisheries, the small amount derived by way of fines being credited to general revenue.

Annual leases have been granted to oyster fisheries, but the return has been insignificant.

(iii.) *Queensland.* Prior to 1907 no account was kept of the value of boats and equipments, but an approximation believed to be very close was furnished. Over a series of years the number of boats and men engaged in general fisheries average 250 and 500. The take in 1907 was 32,500 cwt. of fish, valued at £24,437; in 1908, 31,000 cwt., valued at £28,519; in 1909, 34,050 cwt., valued at £32,987; in 1910, 40,000 cwt., valued at over £36,000, and in 1911, 36,800 cwt., valued at £36,182. There are no lobster fisheries. The quantity put up in tins in the fish-preserving establishments is not great, but the local demand is growing. The revenue from fisheries in Queensland is considerable, and is chiefly derived from licenses and leases. Since 1904 it has generally exceeded £7000, being in 1907, £7921; in 1908, £8176; in 1909, £8108; in 1910, £6848; and in 1911, £6666.

For oyster fisheries, the deep waters in the Moreton Bay and Sandy Strait are leased as dredge sections, which extend across the channels to the islands, and contain from 100 to 1000 acres each. Within these sections the majority of the oyster banks (ground containing up to 30 acres lying within two feet of low-water mark) are situated on the foreshores of the islands, and on the mud and sands flats. In 1907, 60,000 cwt. of oysters were taken, valued at £37,500; in 1908, 37,000 cwt., valued at £35,000; in 1909, 38,300 cwt., valued at £36,000; in 1910, 29,829 cwt., valued at £30,592; and in 1911, 27,000 cwt., valued at £33,586.

In the pearlshell industry, the last three years have been satisfactory, notwithstanding the industrial trouble early in 1908. As much as £150 per ton was lately realised for pearlshell. During recent years, however, there has been a diminution in the production, the number of boats and men engaged being considerably less than formerly. In 1907 the take was 577 tons of pearlshell, valued at £70,495; 338 tons of bêche-de-mer, valued at £30,033; and 3095 lbs. of tortoiseshell, valued at £1927. In 1908 the take was 424 tons of pearlshell, valued at £50,514; 322 tons of bêche-de-mer, valued at £21,631; and 4805 lbs. of tortoiseshell, valued at £2617. In 1909 the take was 516½ tons of pearlshell, valued at £70,505; 314 tons of bêche-de-mer, valued at £14,504; and 3156 lbs. of tortoiseshell, valued at £1389; in 1910, 571 tons of pearlshell, valued at £82,652; 221 tons of bêche-de-mer, valued at £12,785; and 1848 lbs. of tortoiseshell, valued at £838. In 1911, the take was 457 tons of pearlshell, valued at £84,545; 291 tons of bêche-de-mer, valued at £16,370; and 916 lbs. of tortoiseshell, valued at £474. Almost the whole of the bêche-de-mer collected was exported in a cured state to the East, and with few exceptions was fished for by Japanese and Manila men. Prior to 1907 no record of the value of pearls obtained was kept, and it is impossible to make an accurate estimate. In the year named the value was approximately £30,000; in 1908, £20,000; in 1909, £25,000; in 1910, £26,620; and in 1911, £12,150.

(iv.) *South Australia.* In 1907 the take was 20,734 cwt. of fish, valued at £25,121, and 1380 dozen lobsters, valued at £369; in 1908, 25,796 cwt. of fish valued at £34,756, and 14,000 dozen lobsters, valued at £3677; in 1909, 23,095 cwt. of fish, valued at £40,087, and 3522 dozen lobsters, valued at £3299; in 1910, 48,214 cwt. of fish, valued at £87,500, and 3500 dozen lobsters, valued at £4500; and in 1911, 96,000 cwt. of fish, valued at £164,728, and 11,000 dozen lobsters, valued at £5000. The revenue from general fisheries was £286 in 1907, £368 in 1908, £356 in 1909, £301 in 1910, and £365 in 1911, all except £2 in 1911 being derived from licenses. Oyster fishing has been introduced, but has not, up to the present, attained any great dimensions. In 1910, 167 cwt. of oysters, valued at £167, were marketed, and in 1911, 712 cwt., valued at £1388.

(v.) *Western Australia.* The take in 1908 was 1500 tons of fish, valued at £50,000, and 10,000 doz. lobsters, valued at £3000. In 1909 it was 1500 tons of fish, valued at £52,500, and 10,920 dozen lobsters, valued at £3276; in 1910 it was 1511 tons, valued at £56,400, and 9000 dozen lobsters, valued at £3150. In 1911 the value of the fish catch was £60,000, and of the lobsters taken £4800. Revenue from fisheries amounted in 1907 to £787, in 1908 to £1174, in 1909 to £1234, in 1910 to £1474, and in 1911 to £1601.

The quantity of pearlshell obtained in 1907 was 1393 tons, and the value £169,815; in 1908 the quantity was 1286 tons, valued at £161,006; in 1909, 1196 tons, valued at £189,666, in 1910, 1227 tons, valued at £206,461; and in 1911, 1189 tons, valued at £227,233. Pearls to the value of £64,690, £29,225, £52,788, £68,148, and £75,562 were taken in 1907, 1908, 1909, 1910, and 1911 respectively. The bêche-de-mer fisheries are little developed, and no produce of commercial value has been obtained of late years, although previously small quantities were marketed.

(vi. *Tasmania*. The fishing boats and fishermen in Tasmania are not licensed. No record was kept of them prior to 1911. The fish markets are under the control of the municipalities, and these do not keep complete records of quantities sold. In 1908 the estimated take of fish was 17,800 cwt., estimated value £11,400. In 1910 the Hobart fisheries produced 83,269 dozen fish, valued at £14,113, and 6880 dozen lobsters, valued at £2200. In 1911 the production was 69,928 dozen fish, valued at £11,324, and 7167 dozen lobsters, valued at £3000. The revenue over a series of years averages about £600, mostly derived from licenses to angle for salmon and trout with rod and line. In 1907 the total receipts were £596; in 1908, £569; in 1909, £470; and in 1910 and 1911, £557. A special report on the prospects of Tasmanian fisheries was made in 1911 by a Glasgow expert, specially appointed for the purpose. It is stated that fish are very plentiful around the Tasmanian coasts, the variety being large, and the quality choice.

Oyster fisheries are not worked except in a most primitive way.

The work of the Commissioner trends mostly in the way of breeding and distributing young fresh-water fish, especially acclimatised trout.

(vii.) *Northern Territory*. The limitation of shelling grounds and the scarcity of suitable labour has considerably hampered the pearl shelling industry, not more than half the fleet of boats having been engaged in late years. No pearls have been declared, but it is hardly possible that none were procured. It is believed that a quantity of pearls pass through the post office without the knowledge of the Customs, and that dishonest divers send some away unknown to the boat owners—in some instances by special messengers. There are indications that trepang fishing will receive more attention than hitherto from Europeans, in whose hands the whole of the industry is now held. The closing of the coast against the Macassar proas must necessarily cause a shrinkage, but it is expected that in the course of a year or two this will prove a great boon to local boats, inasmuch as it will give the fishing grounds time to recoup. Both the pearlshell and the trepang fisheries are capable of expansion. In 1907 pearlshell taken amounted to 64 tons, valued at £8805. Other products were:—342 lbs. of tortoiseshell, valued at £115; 38,976 lbs. of dried fish, valued at £822; and 20 tons of bêche-de-mer, valued at £898. In 1908, many of the boats were taken off for want of men, others to carry on different work. The take was 58 tons of pearlshell, valued at £7578; 24 tons of bêche-de-mer, valued at £1272; 83,900 lbs. of dried fish, valued at £1697; and 251 lbs. of tortoiseshell, valued at £159. Revenue from licenses amounted in 1908 to £59. In 1909 the licensed pearling fleet consisted of 39 luggers, one steamer, and six canoes. Of these boats only 26 were actually engaged. The area worked over was old ground. The pearlshell taken was 58½ tons, valued at £10,085. With a take equal to that of the previous year, the price realised was about 25 per cent. better. No pearls were reported. The export of trepang was 38 tons, valued at £1906. This industry has been steadily increasing since 1905, when the coast was closed to the Macassar fishermen. The production of dried fish in 1909 was 63,504 lbs., valued at £1091; and tortoiseshell, 376 lbs., valued at £350. In 1910, 55 tons of pearlshell were produced, valued at £10,030; 30 tons of bêche-de-mer, valued at £1303; 34,272 lbs. of dried fish, valued at £5917; and 222 lbs. of tortoiseshell, valued at £160. For 1911 the figures are 71 tons of pearlshell, valued at £15,666; 32 tons of bêche-de-mer, valued at £1342; 140 lbs. of tortoiseshell, valued at £98; 820 cwt. of fish were also taken, valued at £1025. A recent Ordinance of the Federal Government regulates the industry. Vessels engaged in the trade must be licensed, but no licenses are required for the crew. The inspector of fisheries is given power to enter places where fish, pearls, pearlshell, or trepang are being prepared or marketed. The administrator is authorised to close waters against fishing, to declare devices for taking fish illegal, and to fix a minimum weight.

§ 3. Oversea Trade in Fish.

That the development of the fishing industry in Australia leaves much to be desired is evident from the fact that the import of preserved fish into the Commonwealth is large, the export inconsiderable. The figures for the trade are as follows:—

IMPORTS OF FISH, COMMONWEALTH, 1907 to 1911.

Classification.		1907.	1908.	1909.	1910.	1911.
Fresh (oysters) ...	{ cwt. 12,288 £ 5,607	9,702 4,881	10,580 4,989	9,640 4,805	7,152 3,462	
Fresh, or preserved by cold process...	{ cwt. 12,970 £ 22,698	19,311 48,072	11,355 20,785	11,248 23,001	20,455 44,536	
Potted ...	{ cwt. * £ 13,364	* 20,874	* 22,082	* 25,408	* 26,024	
Preserved in tins ...	{ cwt. 127,555 £ 316,320	144,750 400,981	137,860 371,620	154,547 466,381	148,846 443,049	
Smoked, dried and n.e.i.	{ cwt. 15,933 £ 33,078	19,849 34,780	21,667 47,096	19,448 42,918	21,605 52,289	
Total ...	{ cwt.† 168,746 £ 391,067	193,112 509,088	181,462 466,572	194,883 562,513	198,058 569,360	

* Not available. † Exclusive of potted fish.

EXPORTS OF FISH (AUSTRALIAN PRODUCE), 1907 to 1911.

COMMONWEALTH.

Classification.		1907.	1908.	1909.	1910.	1911.
Fish, fresh, smoked, or preserved by cold process	{ cwt. 160 £ 296	394 1,230	994 2,896	912 1,963	248 1,026	
Preserved in tins, dried, salted, etc.	{ cwt. 8,651 £ 38,977	7,006 23,299	6,746 15,556	5,346 17,532	6,891 23,185	
Total	{ cwt. 8,811 £ 39,273	7,400 24,529	7,740 18,452	6,258 19,495	7,139 24,211	

A considerable development has taken place lately in the fish preserving industry. Two factories were opened in the Northern Territory in 1907, and a large output resulted from the operations of those previously established. There was, however, for the Commonwealth an excess of imports over exports amounting approximately to £350,000 in 1906 and 1907, £485,000 in 1908, £450,000 in 1909, £540,000 in 1910, and £545,000 in 1911.

The exports of pearlshell and tortoiseshell are given hereunder for the five years 1907-11:—

EXPORTS OF PEARLSHELL AND TORTOISESHELL, 1907 to 1911.

COMMONWEALTH.

Article.		1907.	1908.	1909.	1910.	1911.
Pearlshell	{ cwt. 41,244 £ 252,063	40,746 250,901	34,579 250,274	39,559 318,647	38,339 325,218	
Tortoiseshell	{ lbs. 3,566 £ 2,192	5,310 2,783	3,207 1,557	1,742 823	1,693 964	

§ 4. Development of the Fishing Industry.

1. **Transport and Marketing.**—The large importations of fish into the Commonwealth indicate the scope for the development of the local fishing industry, and for many years the question of securing to the consumer a regular supply of a wholesome article at a moderate price has been under consideration. The handling and marketing of the product has been undertaken in Sydney by the City Council. Where quick transport by rail or steamer is not provided, the catch of fish in tropical or sub-tropical waters can only be locally consumed, since speedy marketing is essential. Adequate refrigerating apparatus on railway waggons and coasting steamers and quick transport to centres of population might, however, alter the economic condition in a satisfactory direction. In the temperate regions there are adequate supplies close to the principal ports—a fact which is of considerable advantage, since short trips mean marketing of the produce in good condition, and less sea risks are incurred. At the present time the natural wealth of Australia in fish is exploited only to a very slight extent.

2. **Experiment and Culture.**—(i.) *The Existing Fisheries.* In many respects the fishing industry is capable of modification and development. A good deal has been effected by the State Governments in the way of experiment and culture, but much yet remains to be done before the industry is at all commensurate with the industrial progress and consuming capacities of the Commonwealth. A uniform policy of development for Australia is desirable, and recommendations have been made that the Fisheries Departments of the various States should co-operate with the Federal Government with a view to increasing the productiveness of the Commonwealth waters; and that uniform fisheries laws should be adopted by adjacent States. The existing fishing is inshore, the supplies being obtained from the vicinity of river estuaries and lakes. Deep-sea fishing, as established and carried on in older countries, is, so far, practically non-existent in Australia. It has been established that the deposits of fish eggs generally float upon the water. The drift of currents or the influence of winds often carries them a considerable distance from the shore, thus affording very little chance of development. The problem that is now engaging experts all over the world is how to artificially control the drift of eggs, so that the fish may be hatched near shore under the most favourable conditions.

To prevent the importation of fish of predaceous habits, or otherwise undesirable, all live fish arriving in Australia are examined on shipboard.

(ii.) *New South Wales.* In New South Wales, trawling experiments have shewn that considerable areas along the coast are suitable fishing grounds, but practical work on commercial lines is yet undeveloped. The stocking of rivers and lakes was begun by private enterprise, but Government aid was granted later, and eminent success has been attained, particularly with the Californian rainbow trout. Young fry are distributed annually from the trout hatcheries at Prospect, and the natural reproduction of the fish in the streams that issue from the mountain ranges is regarded as a valuable asset. In 1902 attempts were successfully made to transport European fishes alive to Australia. A marine hatchery and biological station has been completed at Gunnamatta Bay, Port Hacking, by means of which it is proposed to gradually acclimatise suitable fishes. There is an increasing output each season of ova and fry. The natural oyster beds are also being extended. In September, 1909, a Fisheries Exhibition was held at Sydney, to shew the resources of the State.

With the object of ascertaining something of the movements of oceanic fishes, as well as of those estuarine fishes which make periodical oceanic migrations, lighthouse-keepers on the coast report weekly the various kinds of fishes, etc., observed travelling along the coast, as well as the quantity and size of fish seen. Some very useful information has in this way been obtained.

By arrangement with the Commonwealth Fisheries Department, members of the staff of the Australian Museum, Sydney, accompany the F.I.S. "*Endeavour*" on various cruises. Specimens are collected, mounted for scientific purposes, and distributed to other Australian Museums, a considerable number being put aside for the Fishery Museum to be established by the Commonwealth Government in connection with the department.

(iii.) *Victoria.* In Victoria, besides the culture that has been mainly the work of private individuals and angling clubs, the Government has incurred the expenditure of a sum of money on hatcheries, with good results. Fry and yearlings are distributed, and one consignment of the latter was despatched from the Geelong hatchery and liberated without loss at Mundaring, Western Australia. Young rainbow and Loch Leven trout are also released into the rivers of the State from the hatcheries lately established at the Zoological Gardens. At Studley Park, Melbourne, and at Ballarat, there are also ponds for experimental culture. Trawling experiments were conducted some years ago, but the results were inconclusive.

(iv.) *Queensland.* In Queensland, artificial hatching was undertaken by the Acclimatisation Society of Southern Queensland. Here, also, the American rainbow trout has succeeded, fry being distributed from the hatchery at Spring Creek, Killarney. The lung-fish, formerly known only in two streams, has been successfully transplanted to several other streams. Oyster beds are also being developed in several localities, and improved methods of culture have largely increased the output. The trawling experiments of 1901 and 1902 point to the improbability of a great trawling industry being established. The trawling area of Queensland would be a mere strip, because of the presence of the coral region immediately to the north, and the fact that the sea deepens very rapidly to the east.

(v.) *South Australia.* In South Australia the indiscriminate exploitation of the Port Lincoln and adjacent oyster beds led to the necessity for their being closed from time to time to prevent the district from being altogether worked out. The future outlook has in this way been improved as regards oyster culture. The South Australian general fishing grounds have been stated to be most desirable areas, only wanting men and boats to ensure a large take. Many new grounds have been opened up on the West Coast and the unsuitable areas have been defined. Trawling by private individuals has been undertaken.

On the 1st April, 1910, the Fisheries Act Amendment Act of 1909 became law, and revised regulations were promulgated. Provision is made that a fisherman must be a natural born or naturalised British subject, and must be licensed and have his boat registered and marked. Inspectors are given considerable powers for the protection of the industry and those engaged in it.

The Fisheries Department is taking active steps to increase supplies, and is gathering information respecting natural breeding grounds, with a view to making them sanctuaries for the breeding of young fish. It is believed that the reservation of these spawning places will replenish the supplies with more certainty and less expense than by artificial hatcheries. The closing of certain waters for breeding grounds has had the effect of increasing the fish supply on the coast and in the River Murray.

(vi.) *Western Australia.* In Western Australia the coastal waters have been examined to ascertain whether suitable trawling grounds exist. The Acclimatisation Committee has successfully hatched and liberated trout, the Mundaring Weir being stocked with the Loch Leven variety. Perch have been stocked in the lakes near Wanneroo Caves.

(vii.) *Tasmania.* Expert advice indicates that the depths of the ocean surrounding Tasmania are ideal for trawling, and that there are very good openings for a profitable fishing trade in the island. Considerable distributions of ova and fry are annually made from the Plenty River in Tasmania. Besides the supplies to Tasmanian waters, the northern States are also recipients of ova.

§ 5. The Commonwealth Department of Fisheries.

1. The Federal Council of Australasia.—The Federal Council had power to legislate with regard to fisheries in Australasian waters beyond territorial limits. In its second session (opened 16th January, 1888), an Act was passed to regulate pearlshell and béche-de-mer fisheries in Australasian waters adjacent to Queensland; and in the third session, opened shortly afterwards, the Act was made applicable to Western Australia. Upon the passing of the Commonwealth Constitution Act of 1900, however, the Federal Council ceased to exist.

2. Commonwealth Investigations.—In 1907 the Commonwealth Government decided to demonstrate what might be attained commercially by the application of modern methods and experiences. A Federal Investigation Ship, the *Endeavour*, was constructed specially for the work, and a Director of Fisheries was appointed. Cruises and experiments were immediately instituted. These shew that the Commonwealth possesses an asset of considerable value in her sea fisheries. The scope and results of the inquiries are set out in the Director's reports, and are summarised below.

3. Scope of the Inquiry.—The immediate scope laid down for the investigation was, shortly, as follows:—

- (i.) By various means of capture to ascertain what marketable food-fishes may be found in ocean waters adjacent to Australia.
- (ii.) In what quantity they may be taken.
- (iii.) To what extent they migrate, and where.
- (iv.) How they may be conveniently and economically captured.
- (v.) By systematic survey to find out and chart suitable fishing grounds.

In addition to the work which is being thus carried on in the various recognised methods of capture (including long-line and drift-net fishing, etc.), survey, hydrographic work, etc., is conducted, for the purpose of ascertaining the nature of the bottom, depth of water, currents, and sea temperature.

4. The F.I.S. "Endeavour."—The construction of the investigation vessel was undertaken in the Commonwealth, and was upon the lines shewn by the most recent European experience to be of greatest advantage, with necessary modifications to suit the Australian climate. Australian materials were used. On 1st June, 1908, the keel was laid, and on 27th August the steel hull was ready for launching. The official trial took place in January, 1909, and on 9th March the equipment being complete, there was put in commission the first Commonwealth-owned sea-going ship, named *Endeavour*, after Captain Cook's historic vessel. The measurements of the vessel are:—134 ft. 9 in. over all; beam, 23 ft.; moulded depth, 11 ft. 9 in.; greatest draft, 11 ft. 9 in. The engines are of triple expansion type, and develop 440 i.h.p. The speed is nearly 11 knots. The vessel is suitably equipped for her work, all available space being put to use, and has proved to be an excellent and reliable sea boat. She closely resembles a modern trawler, fittings for her special service having been added. The main winch is especially powerful, and carries 2000 fathoms of $2\frac{1}{2}$ in. and $1\frac{1}{2}$ in. wire rope for trawling purposes. An additional reel attached to the fast running axle on the winch carries 1500 fathoms of $\frac{3}{4}$ -in. wire rope for hydrographic observations. The starboard side is generally fitted and equipped for operating the large otter trawl (95 feet head line), while on the port rail a Lucas Sounding Machine (5000 fathoms of piano wire) and davits for various purposes have been fixed. The hold is given up to net stores, and a cool chamber for the keeping of fish, etc. On the deck aft is provided a laboratory, where preliminary investigations are carried out. Here also is stored all the special apparatus, including deep-sea water-bottles, thermometers, etc.

5. **The "Endeavour's" Cruises.**—The first cruise began on 12th March, 1909, and ended six days later. Up to the end of 1912 sixty-seven cruises had been made in various localities in the waters off the coasts of Queensland (as far north as Bowen, latitude 20° S.), New South Wales, Victoria, South Australia, and Tasmania. In many cases, areas have been revisited and tested at different seasons of the year, thus affording a fair indication of their true fisheries value.

6. **Results.**—The object of the investigations is to shew how and where food-fish may be obtained in quantity, rather than to bring large catches into port. Moreover, in untested areas, sounding and survey work generally becomes a main feature. The early surveys were extended to cover fields as large as possible, the duration of each haul with the trawl being limited to average about two hours. A commercial vessel, working on well-known grounds, would remain continuously on the richest fields until a freight was secured, and would work longer drags. The take of the *Endeavour*, therefore, is usually considerably below what is to be expected from a vessel working the fields for profit.

Experiments with drift nets and long lines, although up to the present not largely carried out, have given promising results. Trawling has been the principal method tried. By this means the fish are disturbed by a large bag-shaped net drawn along the sea bottom, and they are caught and retained in a trap arrangement at the tail-end of the net. Prior to 1912 the trials were limited to waters of not more than 100 fathoms in depth. During 1912 the work was, in several localities, extended to a depth of 200 fathoms, and shewed that excellent catches could be obtained.

The cruises have shewn that both suitable and unsuitable trawling grounds were met with in all parts, and that not all suitable grounds are rich in fish life. This is a common experience in all parts of the world, and not peculiar to Australia alone. Over vast areas the bottom consists of coarse ("hungry") sand, which is almost barren and desert-like, while in other instances the sand is covered with quantities of sponges and other growth. The richest grounds were found in localities where a reversal of currents or eddies facilitates the accumulation of fish food. Good catches are nearly always obtained along the "edge of the bank" at a depth varying from 70 to 120 fathoms.

In conjunction with the survey work, investigations were undertaken regarding the deep water currents and their relation to the abundance of fish food and migrations. Bottom samples have been obtained from various depths down to 1200 fathoms, and water samples and temperatures from intermediate depths. Plankton collections from the surface have also been obtained, particularly to ascertain the distribution of pelagic fish eggs.

A varied and scientifically interesting collection of rare fishes, invertebrates, etc., has also been obtained. The specimens have been classified and mounted by naturalists in various parts of the Commonwealth.

Reports on the hydrographic, survey, and scientific departments of the vessel's activity are being prepared. At the end of 1911, part I. of the zoological results of the fishing experiments of the *Endeavour* was published; parts II. and III. followed in 1912. These embody reports on the fishes, the mollusca, and the sponges obtained during the cruises. A number of new species have been discovered, and scientifically examined.

7. **Treatment and Disposal of the Catch.**—It was decided that the wisest method of disposing of the fish was to distribute them to recognised charitable institutions. Clash ing with the established industry was thus avoided, and upwards of one hundred charities have benefited.

Upon capture, the prompt gutting and washing of the fish is performed. The necessary records are taken regarding the number, size, food, etc. They are then dried, and stowed in the cool chamber.

Unmarketable fish constitute a considerable proportion of the catch. Experience elsewhere has shewn that fish for which there is no sale for consumption, have a considerable value as material for rich fertilisers, and the extraction of oil. For both these by-products there is a good overseas market.

8. Possibility and Scope for Future Development.—The records of the *Endeavour's* cruises are preserved in the departmental office, and there all particulars of the progress of the work are available. Throughout the years 1909 and 1910, catches have been obtained that commercially would be considered very satisfactory. In particular two instances are recorded of the remarkable return that experience shews is to be expected to accrue from working the areas examined. A vessel working at Flinders Island with Melbourne as a base would yield profits averaging 40 to 45 per cent.; while part of the east coast of New South Wales worked, with Eden as a base, would in one year earn the cost of the trawl and working expenses. It should not be forgotten that the main purpose of the *Endeavour's* cruises is to ascertain by what method the public may most easily be supplied with cheap fish.

The *Endeavour's* work during 1911 and 1912 has not only confirmed previous results as regards the abundance of marketable fish on certain grounds described, but it has been found that these grounds are more extensive than was anticipated, and in some instances even richer than the earlier results indicated. New trawling grounds were located—one very extensive area in the Great Australian Bight at depths up to 120 fathoms; catches averaging about 250 lbs. of marketable fish per hour of trawling were obtained over an area nearly 200 miles in extent east and west, but the full extent of this field has not yet been ascertained.

A special enquiry made in May, 1911, into the methods and character of the *Endeavour's* investigation work, and the prospects and most advantageous scope for future work, resulted in a thoroughly satisfactory report as to past efforts, particularly in the demonstration of profitable trawling grounds, and the possibility of making large supplies of fish available to the public. It was recommended that the investigations be continued for the purpose of further testing areas already shewn to be favourable, and for extending the work in South Australian and Western Australian waters.

In 1911, a cruise was undertaken with the express object of discovering whether large quantities of fish were obtainable within a limited time. The usual survey work was omitted, also experimental fishing in unknown grounds. A highly satisfactory result was obtained, more than five tons of marketable fish being obtained in 19 hours of actual fishing, or about 600 lbs. per hour.

The inadequacy of the present supply of fish in Australia is universally admitted, yet all reports agree that there is, on the coast, a bountiful supply of fish. It is not, as in Great Britain and the northern countries of Europe, a popular article of diet, but is rather in the nature of a luxury. While the value of fish consumed in Norway is nearly 20s., and in Holland, Denmark, and the United Kingdom 5s. per head of population, in Australia it is little over 1s. 6d. Moreover, in the European countries named, notwithstanding the fact that the trawlers have generally to go much further afield for their catches, a shilling's worth of fish represents a much larger quantity than could be obtained for the same amount in the Commonwealth, where the wealth of the coastal waters indicates that, with satisfactory handling, the product of the sea would become an article of food for the poorest classes, and a valuable industry would be developed. The uncertainties and limitations of the market, caused by the irregularity of the supply, will be overcome when the fact is recognised that the ocean product, properly exploited, is adequate to supply the demand, however strong. Under present conditions, it is not surprising that Australians are not great fish-eaters. As a result of the *Endeavour's* experiments, definite steps are being taken to carry out well-considered schemes, which it is hoped will stir up enterprise, and revolutionise the now obsolete and cramped condition of the Australian fish trade.

§ 6. Fish Preserving.

Bounties have been provided by the Federal Government for fish preserving, the rate payable being $\frac{1}{2}$ d. per lb. The amounts paid were £27 in 1907-8; £1727 in 1908-9; £311 in 1909-10; £115 in 1910-11; and £168 in 1911-12. The amount available for 1912-13 is £47,652. It is anticipated that the bounties, together with the increased yield that may be expected to result from the fisheries investigations now being conducted, will lead to a considerable output and consumption of locally preserved fish. The abundance of fish in Australian waters offers excellent opportunities for the institution of preserving establishments, particularly in those coastal districts which enjoy a temperate climate. Up to the present but little development has taken place, and the establishments for fish preserving at the present time are very few.

NUMBER OF FISH-PRESERVING ESTABLISHMENTS IN COMMONWEALTH,

1907 to 1911.

State.	1907.	1908.	1909.	1910.	1911.
New South Wales	1	1	1	1	1
Victoria	4	5	6	6	6
Queensland	3	3	3	3	3
South Australia	2	2	2	2	2
Western Australia	2	2	2	2	2
Tasmania	2	2	2	2	2
Northern Territory	2	2	2	2	2
Commonwealth	10	11	12	13	10

SECTION XII.

MINES AND MINING.

§ 1. The Mineral Wealth of Australia.

1. Place of Mining in Australian Development.—The value of production from the mineral industry is now considerably less than that returned by the agricultural or the pastoral industry, nevertheless it was the discovery of gold in payable quantities, that first attracted population to Australia, and thus laid the foundation of its nationhood. Prior to 1851, the year when Hargraves' memorable discovery was made, coal and copper had both been mined to some extent, and the existence of deposits of other minerals, including gold, had been proved. But it was the news of the sensational finds of the precious metal in 1851 and the year immediately following that brought about a constant stream of immigration, and caused an increase in population from 221,000 at the end of 1841 to upwards of 1,168,000 at the end of 1861.

2. Extent of Mineral Wealth.—The large production of gold, silver, copper, and tin, the extent of the coal deposits, the presence of large quantities of iron ore, and the great variety of minerals found in appreciable quantities, suggest that the future history of mining will, in all probability, be more remarkable even than that of the past. For the extent of the total mineral wealth of Australia cannot yet be regarded as well ascertained, since the mineral exploration of the country is, after all, still in its infancy. The presence of considerable deposits of valuable minerals has long been known. Thus, coal was discovered in 1797, and a shipload was exported to Bengal in 1799; silver was discovered by Count Strzelecki as early as 1839, and was worked as early as 1864; copper mining dates back to 1844; lead to about 1848; iron to about 1850; while the discovery of gold in payable quantities dates back to 1851. Cobalt, nickel, manganese, chromium, tungsten, molybdenum, mercury, antimony, bismuth, zinc, radio-active ores, etc., have all been found, some in fairly large quantities.

Among the more valuable non-metalliferous substances may be mentioned coke, kerosene shale, graphite, alunite, asbestos, diatomaceous earth, clays, ochres, etc.; in building stones, sandstones, syenites, granites, basalts, augite-andesite, porphyries, serpentines, slates, limestones, and marbles; in precious stones, diamonds, emeralds, rubies, sapphires, amethysts, precious opal, turquoise, topazes, garnets, chrysolites, cairngorm, agates, etc. In general it may be said that the variety of Australian mineral wealth is very great.

3. Value of Production during 1911.—Compared with the returns for 1910 the total mineral production of the Commonwealth shews an increase in 1911 of over £265,000. The largest advance is exhibited in the figures for New South Wales, where the total was over £955,000 in excess of that for the preceding year. South Australia also shews an increase amounting to nearly £26,000. The improvement in the States mentioned was, however, counterbalanced by more or less heavy decreases in the remaining States, the return for Western Australia shewing a falling-off amounting to over £416,000, while there was a decline in the Victorian yield to the extent of £166,000. In Victoria the decline is attributed to the falling-off in the gold yield, due to diminished returns from the lode mines at Bendigo, Ballarat and Walhalla, and the deep alluvial workings at Chiltern, Rutherglen, Creswick, and Clunes. In Western Australia, the gold yield shewed a falling-off of £424,000, through diminished returns from the principal fields. In Tasmania the production of copper was adversely affected by the low prices ruling for

the metal in 1911. The decline in the gold yield for the Commonwealth amounted to over £1,000,000, the Northern Territory alone shewing an increased output over the total for the preceding year.

The comparative value of the production of minerals raised in each State during 1911 is given in the following table:—

COMMONWEALTH MINERAL PRODUCTION IN 1911.

Minerals.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	N.T.	C'wealth.
	£	£	£	£	£	£	£	£
Alunite ...	3,795	...	...	...	...	...	...	3,795
Antimony ...	2,010	8,928	72	...	...	...	...	11,010
Asbestos ...	...	...	...	...	...	...	...	...
Bismuth ...	1,800	...	17,089	...	...	5,758	25	24,672
Coal ...	3,167,165	301,142	323,998	...	111,154	26,214	...	3,929,673
Coke ...	184,337	...	...	...	...	...	...	184,337
Copper ...	590,102	2,088	1,151,351	332,500	78,118	408,649	1,470	2,564,278
Diamonds ...	4,064	...	...	...	...	...	...	4,064
Diatomaceous earth	106	1,600	...	...	...	...	...	1,706
Gems (unspecified)...	...	...	24,393	...	...	...	...	24,393
Gold ...	769,353	2,140,855	1,640,323	15,000	5,823,075	132,108	30,910	10,551,624
Gypsum ...	...	448	...	7,275	...	...	...	7,723
Iron ...	145,416	...	...	...	...	...	...	145,416
Iron oxide ...	2,377	...	...	...	...	...	...	2,377
Ironstone flux ...	861	...	11,157	26,400	...	...	...	38,418
Kaolin ...	...	440	...	...	...	...	...	440
Lead (pig, etc.) ...	209,784	...	23,460	...	15,002	...	...	248,246
Limestone flux ...	12,541	...	27,887	7,175	...	...	...	47,603
Manganese ...	...	10	4,021	...	...	...	...	4,031
Molybdenite ...	2,591	...	13,278	...	...	...	...	15,869
Opal ...	57,300	...	3,000	...	...	...	...	60,300
Platinum ...	2,999	989	...	...	...	...	...	3,988
Salt ...	...	*	...	40,600	...	...	...	40,600
Scheelite ...	11,342	...	394	...	...	...	...	11,736
Shale ...	36,980	...	...	...	...	250	...	37,230
Silver ...	177,095	2,135	56,305	140	18,383	...	...	254,008
Silver-lead bullion	...	...	...	...	...	...	...	...
Silver-lead ore	2,265,689	...	...	...	...	253,361	...	2,519,080
Tin ...	307,089	3,417	307,847	...	55,220	513,500	22,900	1,209,973
Wolfram ...	29,991	1,309	54,163	154	826	7,769	4,048	98,260
Zinc ...	1,414,980	...	...	...	189	...	...	1,415,169
Unenumerated ...	5,554	504	...	8,360	3,936	1,888	...	20,242
Total ...	9,405,301	2,463,865	3,658,738	437,604	6,105,853	1,349,497	59,353	23,480,211

It may be pointed out in connection with the figures given in the above table that the totals are exclusive of returns relating to certain commodities, such as stone for building and industrial uses, sand, gravel, brick clays, lime, cement, and slates, which might rightly be included under the generic term "mineral." Valuations of the production of some of these may be obtained from the reports of the various Mines Departments, but in regard to others it is impossible to obtain adequate information. In some instances, moreover, the published information is of little value. Thus, the New South Wales Mines Report supplies the value of exports only in connection with building stone, and it is obvious that such figures are of little value as regards production, while the Victorian figures are incomplete. It has therefore been considered advisable to discard both totals. By restricting the comparison to the items enumerated above, it is believed that a fairly satisfactory estimate of the progress of the mineral industry can be readily obtained. The items excluded from the total for New South Wales in 1911 consist of—lime, £22,918; marble, £1610; Portland cement, £315,569; building stone, £2417; and grindstones, £191. From the Queensland total, fireclay, £2325, has been excluded. The South Australian figures are exclusive of—bluestone, £4163; sulphuric acid, £6940; chalk, £200; flint pebbles, £856; and crude ochre, £105.

4. **Total Production to end of 1911.**—In the next table will be found the estimated value of the total mineral production in each State up to the end of 1911. The figures given in this table are also exclusive of the same items referred to in connection with the preceding table. Thus the total for New South Wales falls short by £1,753,750 of that published by the State Department of Mines, the principal items excluded being cement, £1,471,000, lime £233,000, and building stone, £23,617.

COMMONWEALTH MINERAL PRODUCTION TO END OF 1911.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North'm Territ'y.	C'wealth.
	£	£	£	£	£	£	£	£
Gold	58,760,846	289,663,989	73,739,851	812,505	103,850,486	7,245,982	2,123,322	536,196,981
Silver								
lead	56,476,104	217,735	2,123,801	338,528	670,063	5,949,650	73,999	65,849,880
Copper	11,204,311	215,761	9,250,119	27,285,052	1,052,528	9,816,537	325,408	59,149,716
Tin	8,989,535	776,947	7,746,201	...	983,547	11,429,499	301,897	30,227,626
Coal	65,427,673	2,203,069	5,038,971	...	933,578	548,395	...	74,151,686
Other	15,287,556	384,571	1,827,175	1,325,781	79,073	186,214	40,632	19,131,002
Total	216,146,025	293,462,072	99,726,118	29,761,866	107,569,275	35,176,277	2,865,253	784,706,891

The "other" minerals in New South Wales include antimony, £304,870; bismuth; £127,327; chrome, £101,408; coke, £1,976,214; diamonds, £118,407; iron, £1,740,760; opal, £1,295,199; oil shale, £2,288,061; wolfram, £115,933; and zinc, £5,773,661. In the Victorian returns antimony ore was responsible for £224,712. Included in "other" in the Queensland production were opal, £169,195; gems, other, £186,186; bismuth and wolfram, £786,018; antimony ore, £50,953; manganese, £63,428; limestone flux, £255,222; and ironstone flux, £193,741. The chief item in South Australian "other" minerals was salt, £775,194. In the Tasmanian returns limestone flux was responsible for nearly £100,000, and iron ore for about £26,000.

It will be convenient in the succeeding pages to deal first with gold and the various metals, then with non-metallic minerals and precious stones, and finally to furnish some account of the extent of employment in mining generally.

(A) METALS.

§ 2. Gold.

1. **Discovery of Gold in Various States.**—The discovery of gold in payable quantities was an epoch-making event in Australian history, for as one writer aptly phrases it, this event "precipitated Australia into nationhood." A more or less detailed account of the finding of gold in the various States appears under this section in Official Year Books Nos. 1 to 4, but considerations of space preclude the insertion of this matter in the present issue.

2. **Production of Gold at Various Periods.**—In the table hereunder will be found the value of the gold raised each year in the several States and in the Commonwealth from the dates when payable discoveries were first reported. Owing to defective information in the earlier years the figures fall considerably short of the actual totals, for during the first stages of mining development large quantities of gold were taken out of Australia by successful diggers, who preferred to keep the amount of their wealth secret. For South Australia the records in the earlier years are somewhat irregular, and the remark applies to some extent also to the returns for Western Australia and Tasmania.

In New South Wales the yield for 1911 was much below the average, the output being the lowest recorded since 1902. The decreased yield is in large measure due to the circumstance that the demand for miners in other branches of the industry, coupled with the steady employment obtainable in other pursuits has led to the slackening in operations at a number of small mines and claims which formerly were responsible for no inconsiderable portion of the total output. In Victoria the decrease was mainly due to the falling-off in the returns from the deep alluvial mines at Chiltern, Rutherglen, Creswick, and Clunes, and the quartz mines at Bendigo, Ballarat, and Walhalla. The deficiency in Queensland was due to the reduced returns from some of the chief centres such as Mount Morgan, Charters Towers, Gympie, and Etheridge. Nearly half the fall in the gold production of Western Australia is attributable to a decline in the yield for the East Murchison field. Pilbara and East Coolgardie were the only fields shewing increases during the year.

VALUE OF GOLD RAISED IN AUSTRALIA, 1851 to 1911.

Year.	N.S.W.	Victoria.	Q'sland.	S.A.	W.A.	Tas.	N.T.	C'wealth.
	£	£	£	£	£	£	£	£
1851 ...	468,336	851,596	...	...	...	...	...	1,319,932
1852 ...	2,660,946	9,146,140	...	...	...	...	...	11,807,086
1853 ...	1,781,172	10,976,392	...	...	...	...	...	12,757,564
1854 ...	773,209	8,873,932	...	...	...	...	...	9,647,141
1855 ...	654,594	11,277,152	...	...	...	...	...	11,931,746
1856 ...	689,174	11,214,976	...	8,800	...	...	...	12,912,950
1857 ...	674,477	11,320,852	...	876	...	...	...	11,996,205
1858 ...	1,104,175	10,384,924	...	2,348	...	...	...	11,491,447
1859 ...	1,259,127	9,394,812	...	730	...	...	...	10,654,669
1860 ...	1,465,373	8,896,276	11,631	...	...	...	...	10,373,280
1861 ...	1,806,171	8,140,692	3,137	...	...	...	...	9,950,000
1862 ...	2,467,780	6,920,804	499	12,442	...	...	...	9,401,525
1863 ...	1,796,170	6,779,276	11,820	...	...	...	...	8,587,266
1864 ...	1,304,926	6,469,788	66,513	...	...	...	...	7,861,227
1865 ...	1,231,243	6,446,216	74,216	...	...	...	...	7,751,675
1866 ...	1,116,404	6,187,792	68,325	...	...	...	...	7,372,521
1867 ...	1,053,578	6,005,784	151,125	...	...	4,382	...	7,214,869
1868 ...	994,665	6,739,672	473,956	2,936	...	2,536	...	8,213,765
1869 ...	974,149	6,179,024	417,681	15,593	...	514	...	7,586,961
1870 ...	931,016	5,217,216	390,925	24,217	...	7,475	...	6,570,849
1871 ...	1,250,485	5,475,768	492,635	6,000	...	14,218	...	7,239,106
1872 ...	1,644,177	5,325,508	527,365	6,363	...	16,055	...	7,519,468
1873 ...	1,396,375	4,681,588	572,996	293	...	18,390	...	6,669,642
1874 ...	1,041,614	4,390,572	1,062,899	4,175	...	18,491	...	6,537,751
1875 ...	877,694	4,273,668	1,196,583	7,034	...	11,982	...	6,366,961
1876 ...	613,190	3,855,400	1,140,282	9,888	...	44,923	...	5,663,323
1877 ...	471,448	3,238,612	1,043,780	...	...	23,289	...	4,777,129
1878 ...	430,200	3,032,160	1,149,240	1,225	...	100,000	...	4,712,825
1879 ...	407,219	3,035,788	1,034,216	90	...	230,895	...	4,708,208
1880 ...	444,253	3,316,484	944,869	...	...	201,297	...	4,906,903
1881 ...	573,582	3,333,512	957,570	880	...	262,901	111,945	5,194,890
1882 ...	526,522	3,458,440	785,868	3,080	...	187,337	82,274	5,043,521
1883 ...	458,530	3,121,012	736,810	10,534	...	176,442	77,195	4,580,252
1884 ...	396,059	3,114,472	1,062,471	15,469	...	160,404	77,935	4,826,810
1885 ...	378,665	2,940,872	1,062,514	18,295	...	155,309	70,414	4,626,069
1886 ...	366,294	2,660,784	1,187,189	32,535	1,148	117,250	63,139	4,428,339
1887 ...	394,579	2,471,004	1,481,990	72,003	18,517	158,533	68,774	4,665,400
1888 ...	317,241	2,500,104	1,690,477	34,205	13,273	147,154	34,802	4,737,256
1889 ...	434,784	2,459,352	2,695,629	37,305	58,871	119,703	47,651	5,853,295
1890 ...	460,285	2,354,240	2,182,563	20,808	86,664	75,888	80,769	5,261,217
1891 ...	559,231	2,305,596	2,030,312	27,380	115,182	145,459	98,701	5,281,861
1892 ...	575,299	2,617,824	2,164,391	26,097	226,284	158,917	109,658	5,878,470
1893 ...	651,286	2,694,504	2,167,794	12,561	421,885	141,326	108,130	6,186,986
1894 ...	1,156,717	2,867,816	2,330,282	33,401	787,099	217,024	109,699	7,502,038
1895 ...	1,315,929	2,960,344	2,150,561	26,060	879,748	206,115	102,816	7,641,573
1896 ...	1,073,360	3,220,348	2,132,979	14,350	1,068,808	237,574	81,210	7,928,629
1897 ...	1,104,315	3,251,064	2,552,668	39,020	2,564,977	296,660	81,210	9,889,914
1898 ...	1,201,743	3,349,028	2,750,348	10,676	3,990,698	291,496	84,789	11,678,778
1899 ...	1,623,320	3,418,000	2,838,446	15,582	6,246,732	327,545	63,565	14,533,190
1900 ...	1,070,920	3,229,628	2,871,578	14,494	6,007,610	316,220	67,988	13,578,438
1901 ...	737,164	3,102,753	2,541,764	16,613	7,235,653	295,176	76,609	14,005,732
1902 ...	684,970	3,062,028	2,720,612	24,878	7,047,661	301,573	70,325	14,811,947
1903 ...	1,080,029	3,259,482	2,839,801	28,650	8,770,719	254,403	61,600	16,294,684
1904 ...	1,146,100	3,252,045	2,714,034	76,025	8,424,226	280,015	3,983	15,897,337
1905 ...	1,165,013	3,173,744	2,517,295	45,853	9,305,654	312,380	30,971	15,550,910
1906 ...	1,078,866	3,280,478	2,313,464	27,000	7,622,749	254,963	54,225	14,631,745
1907 ...	1,050,730	2,954,617	1,978,938	20,540	7,210,749	277,607	21,928	13,515,109
1908 ...	954,854	2,649,838	1,975,554	12,300	6,999,882	242,482	23,943	13,058,853
1909 ...	869,546	2,778,956	1,835,178	30,206	6,776,274	190,201	24,146	12,604,509
1910 ...	802,211	2,422,745	1,874,955	28,000	6,246,848	157,370	21,711	11,553,840
1911 ...	769,353	2,140,855	1,640,323	15,000	5,823,075	132,108	30,910	10,551,624
Total £	58,760,846	289,663,989	73,739,851	892,810	103,850,486	7,245,982	2,043,017	536,196,961

The amount of gold raised in the Commonwealth in any one year attained its maximum in 1903, in which year Western Australia also reached its highest point. For the other States of the Commonwealth the years in which the greatest yields were obtained, were as follows:—New South Wales, 1852, Victoria, 1857, Queensland, 1900, South Australia, 1904, and Tasmania, 1899.

The following table shows the quantity in fine ounces of gold raised in each State and in the Commonwealth during each of the last ten years, the value of one ounce fine being £4 4s. 11 $\frac{1}{2}$ d.

QUANTITY OF GOLD PRODUCED IN THE COMMONWEALTH, 1902 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	C'wealth.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
1902	161,256	720,863	640,463	7,231	1,871,039	70,996	15,182	3,487,030
1903	254,260	767,347	668,546	8,650	2,064,803	59,892	12,597	3,836,095
1904	269,817	765,596	639,150	17,897	1,983,230	65,921	938	3,742,549
1905	274,267	747,163	592,622	10,983	1,955,317	73,540	7,103	3,660,995
1906	253,987	772,290	544,636	8,037	1,794,548	60,023	11,085	3,444,606
1907	247,363	695,576	465,882	5,609	1,697,555	65,354	4,389	3,181,728
1908	224,792	670,909	465,085	2,908	1,647,912	57,085	5,624	3,074,815
1909	204,708	654,222	455,579	7,111	1,595,270	44,777	5,685	2,967,352
1910	188,857	570,362	441,402	6,603	1,470,633	37,048	5,100	2,720,005
1911	181,120	504,000	386,165	3,537	1,370,868	31,191	7,277	2,484,068

3. **Changes in Relative Positions of States as Gold Producers.**—A glance at the figures in the table shewing the value of gold raised will sufficiently explain the enormous increase in the population of Victoria during the period 1851 to 1861, when an average of over 40,000 persons reached the State each year. With the exception of the year 1889, when its output was surpassed by that of Queensland, Victoria maintained its position as the chief gold-producer for a period of forty-seven years, or up to 1898, when its production was outstripped by that of Western Australia, the latter State from this year onward contributing practically half the entire yield of the Commonwealth. New South Wales occupied the second place on the list until 1874, when Queensland returns exceeded those of the parent State, a condition of things that has been maintained ever since. South Australia has occupied the position of lowest contributor to the total gold yield of the Commonwealth since the year 1871. Taking the average of the last ten years, the relative position of each State in regard to the gold production of the Commonwealth was as follows :—

RELATIVE POSITION OF STATES AS GOLD PRODUCERS, 1902 to 1911.

State.	Annual Average of Gold Production, 1902 to 1911.	Percentage on Commonwealth.	State.	Annual Average of Gold Production, 1902 to 1911.	Percentage on Commonwealth.
Commonwealth ...	£ 13,847,056	100.00	New South Wales	£ 960,168	6.94
Western Australia	7,412,784	53.53	Tasmania ...	240,310	1.71
Victoria ...	2,917,479	21.07	South Australia *	65,219	0.47
Queensland ...	2,251,096	16.26			

* Including Northern Territory: average for period £34,374.

4. **Methods of Gold Mining adopted in Each State.**—The circumstances of gold mining in the various States are not quite identical, for which reason reference is made to that of each State.

(i.) *New South Wales.* In New South Wales the earlier “rushes” were to surface alluvial or shallow-sinking grounds. Many of these were apparently soon worked out, but there is reason to believe that in some instances payable results would be obtained by treating the rejected wash-dirt on more scientific principles. With the exhaustion of the surface deposits discoveries were made by sinking to what are called deep alluvial leads, representing the beds of old drainage channels in Pliocene times. The first of these deep alluvial leads was discovered at Forbes, in New South Wales, in 1862. The Tertiary deep leads at Gulgong were discovered in 1871. Cretaceous leads occur at Tibooburra, and detrital gold has been found in permo-carboniferous conglomerates at Tallawang. The method of dredging is at present being extensively used for winning gold from the beds

of running streams, and from loose river flats and other wet ground where sinking would be impracticable. The system was introduced from New Zealand, where it was originally applied with great success on the Clutha River, and there are now dredges working on practically all the auriferous rivers of New South Wales. Hydraulic sluicing is also employed in several places, the necessary machinery being fitted to a pontoon for convenience in moving from place to place. The quantity of alluvial gold obtained, other than by dredging, amounted to 8073 ozs. in 1911, the chief yields being—Braidwood, 1948 ozs.; Stuart Town, 500 ozs.; Wattle Flat, 474 ozs.; and Uralla, 401 ozs. The quantity obtained by dredging was 25,494 ozs.; the largest returns being obtained at Araluen, 8960 ozs.; Adelong, with 3409 ozs.; Braidwood, 2877 ozs.; Wellington, 2489 ozs.; Stuart Town, 2227 ozs.; and Yambulla 1868 ozs. The dredges in operation during 1911 numbered 71, of which 25 were of the bucket type and 46 were suction plants. In the recovery of gold 21 bucket dredges and 14 pumping plants were employed, while four bucket dredges and 32 pumping plants were engaged in the winning of stream tin. The value of the plants in operation was estimated at £388,991. The quantity of gold won from quartz amounted to 133,225 ozs. At the present time the Cobar district is the chief centre of the production from quartz, the yields from the Cobar and Canbelego fields included therein being respectively 42,596 ozs. and 26,194 ozs. Next come the Hillgrove field, with 10,848 ozs.; Wyalong, 7865 ozs.; Wellington, 5715 ozs.; Peak Hill, 5588 ozs.; and Adelong, 5145 ozs.

The table below shews as far as can be ascertained the yield from alluvial and quartz mining in each of the principal districts during 1911. Owing to the circumstance that it was impossible to obtain complete returns from the whole of the mine and battery owners the total for the State necessarily falls short of that given in preceding pages.

GOLD WON IN NEW SOUTH WALES, ALLUVIAL AND QUARTZ, 1911.

District.	Alluvial.		Quartz.	Total.
	Other than by Dredging.	By Dredging.		
	ozs.	ozs.	ozs.	ozs.
Albert	159	...	2,295	2,454
Bathurst	834	4	4,597	5,435
Clarence and Richmond	92	...	1,018	1,110
Cobar ... ..	...	...	69,054	69,054
Hunter and Macleay	2	...	348	345
Lachlan	514	1,709	19,376	21,599
Mudgee	1,077	2,489	11,462	15,028
New England	153	33	462	648
Peel and Uralla	793	2,072	11,435	14,300
Southern	2,448	11,959	7,670	22,077
Tambaroora and Turon	1,121	3,466	123	4,710
Tumut and Adelong	880	3,762	5,390	10,032
Total	8,073	25,494	133,225	166,792

(ii.) *Victoria.* Quartz-reefing predominates in Victoria, although a considerable amount of gold is obtained from alluvial workings, both surface and deep leads. The deepest mines in Australia are found in the Bendigo district, where the two deepest shafts were at the 31st December, 1911, 4614 and 4318 feet deep respectively. Altogether there were at the close of 1911 no less than fifty-three shafts in this district which had reached a depth of over 2000 feet. A considerable amount of attention is given to dredging and hydraulic sluicing, particularly in the Beechworth, Maryborough, Castlemaine, Ararat, Stawell, and Ballarat districts, the number of plants in operation at the end of 1911 being 95. The total quantity of gold won from dredge mining in 1911 was 78,535

ounces, and from sluicing 3059 ounces, the total area treated being 706 acres. The yields from alluvial workings and quartz reefs as returned (in crude ounces) from the chief mining districts of the State during last year were as follows:—

GOLD WON IN VICTORIA, ALLUVIAL AND QUARTZ, 1911.

District.	Alluvial.	Quartz.	Total.
	ozs.	ozs.	ozs.
Ararat and Stawell	15,967	6,009	21,976
Ballarat	15,704	64,884	80,588
Beechworth	79,174	19,520	98,694
Bendigo	2,520	166,140	168,660
Castlemaine	13,010	60,892	73,902
Gippsland	6,498	25,753	32,251
Maryborough	39,457	28,172	67,629
Total	172,330	371,370	543,700

The largest output from lode mines in 1911 was furnished by the Central Red, White and Blue, at Bendigo, with 20,686 ozs.; followed by the Lord Nelson, St. Arnaud, with 13,080 ozs.; the North Nuggetty Ajax, Daylesford, with 10,548 ozs.; and the South New Moon, Bendigo, with 9946 ozs. Of the deep alluvial mines the Duke and Main Leads Consols, at Maryborough, produced 11,636 ozs., and the Cathcart, at Ararat, 11,133 ozs. In dredging, the Maori Queen Proprietary, at Bright, headed the list with a return of 3648 ozs.

(iii.) *Queensland.* Operations in Queensland are at present chiefly confined to quartz reefing, the yield from alluvial in 1911 being only 6664 ounces, while the quantity produced from quartz was 272,014 ounces; from copper and other ores 103,093 ounces; and from old tailings 4393 ounces; making a total production of 386,164 ounces, valued at £1,640,323. The yields from the principal fields are given below:—

GOLD WON IN QUEENSLAND, ALLUVIAL AND QUARTZ, 1911.

District.	Alluvial.	Quartz.	From Copper and other Ores and old Tailings.	Total.
	fine ozs.	fine ozs.	fine ozs.	fine ozs.
Charters Towers	398	133,074	361	133,833
Gympie	322	50,561	71	50,954
Mount Morgan	89	51,449	76,803	128,341
Ravenswood	177	20,059	126	20,362
Croydon	4	5,955	1,947	7,906
Etheridge and Woolgar	894	5,973	2,747	9,614
Cloncurry	105	2	12,498	12,605
Gladstone	94	2,466	1,267	3,827
Rockhampton	63	95	8,917	9,075
Other districts	4,518	2,380	2,749	9,647
Total	6,664	272,014	107,486	386,164

(iv.) *South Australia.* In South Australia alluvial gold has been worked for many years in the gullies round Adelaide, while a fair amount of gold has been obtained by this method at Teetulpa, in the northern areas. There are some valuable reefing fields in the Echunga district, at Mt. Grainger, Barossa, Wadnaminga, Mannahill, etc., but they have not been developed to the extent they deserve. Good stone was discovered a few years ago at Tarcoola, but the present returns are comparatively small. The rich finds at Arltunga in the centre of the continent, within the boundaries of the Northern

Territory, have not yielded up to expectations, but the field has not been systematically prospected. It is stated that the gold occurs chiefly in vughs, crevices, and cellular quartz, the latter being at times exceedingly rich. The solid stone is low grade and is not worked. Operations are confined to the vein matter, which is passed through screens, and the larger lumps hand picked, the "fines" and all that contains vughs or cellular quartz being saved for treatment and the balance discarded. South Australia is not divided into mining districts as is the case in the other States. The Macdonnell Ranges, although within the boundaries of the Northern Territory and coming under the operation of the Northern Territory Mining Act, yet geographically belong to South Australia proper. The total output of gold for 1911 from the Northern Territory amounted to 7277 ounces, valued at £30,910.

(v.) *Western Australia.* In Western Australia the operations are confined principally to quartz reefing, the returns from ordinary alluvial and hydraulic sluicing being comparatively small. Estimates give the average value of ore treated in 1911 as 41.2 shillings as compared with 41.5 shillings in 1910. The total production of gold from all sources during 1911 was 1,370,868 ounces, of which only 0.3 per cent. was alluvial.

GOLD WON IN WESTERN AUSTRALIA, ALLUVIAL AND QUARTZ, 1911.

Goldfields.	Alluvial.	Dollied and Specimens.	Crushed.	Total.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
East Coolgardie	365	587	775,541	776,493
East Murchison	293	1,943	100,155	102,391
Mount Margaret	460	678	151,336	152,474
Murchison	278	2,084	117,291	119,653
North Coolgardie	118	181	64,460	64,759
Coolgardie	503	424	32,827	33,754
Dundas	32	292	28,665	28,989
North-east Coolgardie	439	1,146	17,970	19,555
Yilgarn	2	131	18,679	18,812
Broad Arrow	185	214	6,754	7,153
Peak Hill	162	434	1,150	1,746
Pilbara	655	112	3,841	4,608
Phillips River	12	18	5,626	5,656
Yalgoo	503	31	628	1,162
West Pilbara	159	16	808	983
Ashburton	256	...	...	256
Kimberley	171	...	...	171
Other goldfields	9	3	360	372
Total	4,602	8,294	1,326,091	1,338,987

The figures in the above table are compiled from returns from the individual mines and are somewhat incomplete; the total is therefore less than that shewn on page 481, which represents mint and export returns.

(vi.) *Tasmania.* The yield from Tasmania is also chiefly obtained from quartz reefing, although there is a little alluvial mining carried on in the Lisle district. The yields as returned from the chief centres in 1911 are shewn hereunder:—

GOLD WON IN TASMANIA, ALLUVIAL AND QUARTZ, 1911.

Description.	Northern & Southern.	North-eastern.	Eastern.	Western.	Total.
	OZS.	OZS.	OZS.	OZS.	OZS.
Quartz	21,596	...	1,301	7,918*	30,815
Alluvial	136	237	...	85	458

* Gold contained in blister copper and silver-lead bullion.

The total production equalled 31,101 fine ounces, valued at £132,108, of which the Tasmanian Gold Mine Ltd., in the Beaconsfield district, produced 21,326 ozs., valued at £92,478.

5. Remarkable Masses of Gold.—Allusion has already been made in preceding Year Books to the discovery of “nuggets” and other remarkable masses of gold, but it is not proposed to repeat this information in the present issue.

6. Modes of Occurrence of Gold in Australia.—This subject has been alluded to at some length in preceding issues of the Year Book, but considerations of space will not permit of repetition in the present issue.

7. Place of Commonwealth in the World's Gold Production.—In the table given below will be found the estimated value of the world's gold production, and the share of the Commonwealth therein during the ten years 1902 to 1911. The figures given in the table have been compiled chiefly from returns obtained direct by the Commonwealth Bureau of Census and Statistics from the gold-producing countries of the world.

WORLD'S GOLD PRODUCTION, 1902 to 1911.

Year.	World's Production of Gold.	Gold produced in Commonwealth.	Percentage of C'wealth on Total.
	£	£	%
1902	60,619,000	14,812,000	24.43
1903	66,761,000	16,295,000	24.41
1904	70,554,000	15,897,000	22.53
1905	76,839,000	15,551,000	20.24
1906	83,180,000	14,632,000	17.59
1907	84,770,000	13,515,000	15.94
1908	90,370,000	13,059,000	14.45
1909	91,910,000	12,605,000	13.71
1910	94,193,000	11,554,000	12.27
1911	93,999,000	10,552,000	10.16

While the production of gold in the Commonwealth rose by about 17 per cent. in the fifteen years from 1897 to 1911, the world's total increased by about 95 per cent. in the same period. The following table will be found interesting, as shewing the various foreign countries where the chief increases have taken place during the interval in question:—

INCREASE IN GOLD YIELD, VARIOUS COUNTRIES, 1897 to 1911.

Country.	1897.	1900.	1909.	1910.	1911.
	£	£	£	£	£
United States ...	11,787,000	16,269,000	20,481,000	19,781,000	19,774,000
Canada ...	1,240,000	5,742,000	1,928,000	2,097,000	2,010,000
Mexico ...	2,045,000	1,884,000	4,582,000	4,930,000	5,065,000
Transvaal ...	11,654,000	1,481,000	30,988,000	31,973,000	35,041,000
Rhodesia ...	800	308,000	2,624,000	2,568,000	2,648,000
Gold Coast ...	85,000	38,000	979,000	780,000	1,079,000
Madagascar ...	8,500	142,000	505,000	442,000	389,000
India ...	1,571,000	1,893,000	2,205,000	2,202,000	2,271,000
Korea ...	208,000	371,000	631,000	955,000	953,000
Japan ...	142,000	290,000	520,000	581,000	614,000
Java ...	94,000	112,000	630,000	723,000	625,000
Cuba Rica ...	2,000	31,000	116,000	96,000	149,000

The largest increase was recorded in the Transvaal, where the production more than trebled itself in the fifteen years 1897 to 1911.

8. Employment in Gold Mining.—The number of persons engaged in gold mining in each State in 1901 and during each of the last five years is shewn in the following table:—

PERSONS EMPLOYED IN GOLD MINING, 1901 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.	C'w'ith.
	No.	No.	No.	No.	No.	No.	No.	No.
1901 ...	12,064	27,387	9,488	1,000	19,771	1,112	200	70,972
1907 ...	7,468	23,291	8,883	900	17,237	953	250	58,982
1908 ...	6,863	20,853	7,786	880	16,075	843	333	53,083
1909 ...	5,585	18,671	7,150	920	17,027	713	257	50,323
1910 ...	5,247	16,553	6,115	950	16,279	682	306	46,132
1911 ...	4,650	14,015	5,227	920	15,428	570	358	41,168

§ 3. Platinum and the Platinoid Metals.

1. **Platinum.**—(i.) *New South Wales.*—The existence of platinum was first noted in New South Wales in 1851 by Mr. S. Stutchbury, who found a small quantity near Orange. Since the year 1878 small quantities of the metal have been obtained from beach sands in the northern coastal district. Platiniferous ore was noted in 1889 at Broken Hill. The chief deposits at present worked in the State are situated at Fifield, near Parkes, but the entire production in 1911 was small, amounting to only 470 ozs., valued at £2999, while the total production recorded to the end of 1911 amounted to 12,380 ozs., valued at £25,130.

The increased price of the metal was responsible for the opening up of some of the inferior land at Platina, in the Fifield district; and the production for the year was consequently higher than in 1910, when the yield was recorded at 332 ozs. A certain amount of gold is also obtained from the wash-dirt in this division, the proportion of the metals averaging about 1 part of gold to 7 of platinum per load.

(ii.) *Victoria.* In Victoria the metal has been found in association with copper at the Walhalla Copper Mine in Gippsland. The mine was worked extensively from 1874 to 1881 and then abandoned, but was reopened in 1910. It is stated that there are 70,000 tons of ore in sight, assaying three to four per cent. copper, and containing also platinum and silver. The production of platinum in 1911 amounted to 184 ozs., valued at £989.

2. **Osmium, Iridium, etc.**—(i.) *New South Wales.* Small quantities of osmium, iridium, and rhodium are also found in various localities. As far back as 1860, the Rev. W. B. Clarke states that he found native iridium. Platinum, associated with iridium and osmium, has been found in the washings from the Aberfoil River, about 15 miles from Oban, on the beach sands of the northern coast; in the gem sand at Bingara, Mudgee, Bathurst, and other places. In some cases, as for example in the beach sands of Ballina, the osmiridium and other platinoid metals amount to as much as 40 per cent. of the platinum, or about 28 per cent. of the whole metallic content.

(ii.) *Victoria.* In Victoria, iridosmine has been found near Foster, and at Waratah Range, South Gippsland.

(iii.) *Tasmania.*—For many years osmiridium has been known to exist in the bed of the Savage River, on the West Coast, and in rivulets and creeks in the Serpentine country, but it was not until early in 1911 that efforts were made to work the deposits. During that year the price paid for the mineral was as high as £7 10s. per oz., and about 100 men were engaged in the search for it. The quantity produced amounted to 272 ozs., valued at £1888.

§ 4. Silver.

1. **Occurrence in Each State.**—Particulars regarding the occurrence of silver in each State will be found in preceding Year Books, Nos. I. to V., but considerations of space preclude the repetition of this matter in the present volume.

2. **Development of Silver Mining.**—In illustration of the development of silver mining in Australia the following table has been compiled, shewing the production of silver, silver-lead and ore, and lead from each State during the years 1881, 1891, and the ten years ending 1911:—

PRODUCTION OF SILVER AND LEAD, AUSTRALIA, 1881 to 1911.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tasmania.	North. Terr.	C'wealth.
	£	£	£	£	£	£	£	£
1881	...	5,239	13,494	1,182	11,224	...	...	31,139
1891	3,621,614	6,017	21,879	1,787	250	62,138	4,140	3,717,825
1901	1,954,964	6,550	69,234	3,886	7,718	325,335	...	2,367,687
1907	4,290,128	4,355	187,870	11,780	26,674	572,560	2,093	5,095,460
1908	2,346,941	2,835	206,716	9,000	23,883	322,007	30	2,911,412
1909	1,839,688	2,310	167,636	673	19,977	298,880	...	2,329,164
1910	2,110,040	2,090	123,086	907	20,210	247,576	...	2,503,909
1911	2,652,548	2,070	79,765	140	33,335	*253,361	...	3,021,219

* Exclusive of silver to the estimated value of £42,831 contained in blister copper.

1. *New South Wales.* The figures quoted for New South Wales in the above table represent the *net* value of the product (excluding zinc) of the silver-lead mines of the State. In explanation of the values thus given, it must be noted that the metallic contents of the larger portion of the output from the silver-lead mines in the State are extracted outside New South Wales, and it is considered, therefore, that the State should not take full credit for the finished product. Hence the *net* value referred to above relates to that of the ore, concentrates, and bullion, as declared by the several companies to the Customs Department at date of export. The real importance of the State as a producer of silver, lead, and zinc is thus to some extent lost sight of. The next table, however, which indicates the quantity and value of these metals locally produced, and the quantity and value of concentrates exported during the last eight years, will shew the estimated total value of the yield:—

**VALUE OF PRODUCTION FROM SILVER-LEAD MINES OF NEW SOUTH WALES,
1904 TO 1911.**

Year.	Value of Silver, Lead, and Spelter produced within the C'wealth.	Value of Concentrates Exported.	Total.
	£	£	£
1904	2,088,784	642,125	2,730,909
1905	2,131,317	1,181,720	3,313,037
1906	2,112,977	1,876,834	3,989,811
1907	2,228,420	3,574,775	5,803,195
1908	2,008,410	2,400,997	4,409,407
1909	1,176,394	2,707,680	3,884,074
1910	1,755,220	3,180,850	4,936,070
1911	1,949,271	3,259,246	5,208,517

As regards silver alone, the following table, which has been prepared on a basis similar to that on which the preceding table was compiled, shews the estimated total quantity and value of that metal yielded by the mines of New South Wales up to the end of 1903 and during the last eight years:—

ESTIMATED QUANTITY AND VALUE OF SILVER YIELDED BY MINES OF NEW SOUTH WALES, TO END OF 1911.

Period.	Produced in Australia.		Contained in Concentrates, etc., Exported.		Total Production.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Fine ozs.	£	Fine ozs.	£	Fine ozs.	£
To the end of 1903 ...	82,947,404	13,807,421	104,659,834	18,330,147	187,607,238	32,137,568
1904	7,751,667	920,947	2,945,058	349,891	10,696,725	1,370,838
1905	6,904,934	852,533	3,480,561	436,050	10,235,495	1,288,583
1906	5,575,410	775,409	3,111,013	432,669	8,686,423	1,208,078
1907	5,921,457	795,982	6,228,225	845,845	12,149,682	1,641,827
1908	6,484,288	693,034	5,499,381	587,768	11,983,669	1,280,802
1909	3,717,016	382,605	6,867,775	732,563	10,584,791	1,115,168
1910	5,196,323	561,280	7,608,336	843,257	12,804,659	1,404,537
1911	5,731,468	620,578	8,797,677	973,210	14,529,145	1,593,788
Total ...	130,129,967	19,409,789	149,197,860	23,531,400	279,327,827	42,941,189

With the exception of Block 10 and Junction Mines all the mines on the Broken Hill field were in active operation during the year, the total ore raised amounting to 1,484,897 tons or 240,713 more than in the preceding year.

3. Chief Centres of Silver Production.—Broken Hill, in New South Wales, and Zeehan, in Tasmania, are the great centres of silver production in Australasia. The production in Queensland has, however, considerably expanded during the last few years.

(i.) *New South Wales.* (a) *Broken Hill.* The bulk of the production is, of course, from New South Wales, being contributed mainly by the mines in the celebrated Broken Hill district. A description of the silver-bearing area in this district is given in preceding issues of the Year Book.

Although the returns are not complete in all cases, the following table relating to the mines at Broken Hill will give some idea of the richness of the field:—

YIELDS OF BROKEN HILL SILVER MINES, 1911.

Mine.	Authorised Capital.	Value of Output to end of 1911.	Dividends and Bonuses Paid to end of 1911.
	£	£	£
Broken Hill Proprietary Co. Ltd. ...	384,000	33,994,053*	9,992,000†
Broken Hill Proprietary Block 14 Co. ...	155,000	3,352,798	462,827
British Broken Hill Proprietary Co. ...	264,000	2,307,595	367,500
Broken Hill Proprietary Block 10 Co. ...	1,000,000	3,856,666	1,255,000
Sulphide Corporation Ltd. (Central Mine) ...	1,100,000	12,186,471‡	941,875
Broken Hill South Silver Mining Co. ...	200,000	4,139,900	905,000
North Broken Hill Mining Co. ...	175,000	2,005,930†	405,190
Broken Hill Junction Lead Mining Co. ...	100,000	813,055†	85,000
Broken Hill Junction North Silver Mining Co. ...	180,000	1,153,682	79,793
Broken Hill South Blocks Ltd. ...	200,000	655,819||	10,000
Broken Hill South Extended Ltd. ...	387,500	150,844	50,000
Totals ...	4,095,500	64,616,713†	14,554,185

* The value of the ores purchased during 1908, 1909, 1910, and 1911 is not included. † Incomplete. ‡ Excluding nominal value of shares (£1,744,000) in Block 14, British, allotted to shareholders of Broken Hill Proprietary. § This company went into liquidation on 24th July, 1911, and after that date the mine was worked by the Zinc Corporation Ltd.

(b) *Yerranderie.* The mines on the Yerranderie field in the Southern Mining District produced 728,340 ozs. of silver in 1911, besides small quantities of gold and lead, the total production being valued at £105,600. It is stated that mining operations are carried on under considerable difficulties owing to the heavy cost of transport, and that the advent of a railway (the construction of which is proposed) would completely change the outlook.

(c) *Kangiarra.* The yield from the Kangiarra field, in the Yass district, consisted of 40,268 ozs. of silver, besides gold, 115 ozs.; lead, 729 tons; zinc, 474 tons; and copper, 108 tons; the total production being valued at £32,656.

(d) *Conrad.* The ore raised by the Conrad Mines Ltd., at Howell, in the Tingha division, amounted in 1911 to 21,662 tons, valued at £49,662, of which lead concentrates accounted for £21,058; and copper matte, £22,969. The number of men employed in 1911 was 210, and the value of plant and machinery, £10,000.

(e) *Cobar.* A considerable quantity of silver is obtained from the Great Cobar Ltd. Mine and attached properties, the production in 1911 amounting to 122,559 ozs. At the Cobar Peak Silver Mine the production was 3400 ozs.

(ii.) *Tasmania, West Coast.* The silver-lead mines on the west coast are now well established. Amongst the most important are the Mt. Zeehan, Zeehan-Montana, Zeehan-Western, Zeehan-Dundas, Oonah, Comet, Hercules, Adelaide, North Mt. Farrell, Primrose (Rosebery), and Chester (North Pieman). The blister copper produced by the

Mt. Lyell Co. in 1911 contained fine silver valued at £42,831. The total production of silver-lead ore in 1911 was 61,501 tons, valued at £253,361.

(iii.) *Queensland.* The yield for the chief silver-producing centres in 1911 was as follows:—Chillagoe, £13,235; Charters Towers, £9031; Stanthorpe, £12,525; Cloncurry, £3073; Rockhampton, £3456.

4. **World's Production of Silver.**—The world's production of silver during the last nine years is estimated to have been as follows:—

WORLD'S PRODUCTION OF SILVER, 1903 to 1911.

Year	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.
World's production* in 1000 fine ozs. ...	173,222	176,840	181,338	184,552	183,386	212,570	227,291	240,223	251,909

* Add 000 to figures for fine ounces.

Australasia's share in the world's silver production in 1911 was estimated at 17,109,000 ounces, or about 6½ per cent. on the total production.

5. **Prices of Silver.**—As the production of silver is dependent to a very large extent on the price realised, a statement of the average price per standard ounce paid by the London Mint at various periods and during the last five years is given below.

PRICE OF SILVER, 1871 to 1911.

Year	1871.	1881.	1891.	1901.	1907.	1908.	1909.	1910.	1911.
Pence per standard oz. ...	60½	51½	45½	27½	28½	24½	23½	24½	24½

During the month of November, 1906, owing to the small sales in New York, and also to the fact that the Indian, American, and Mexican Governments were all buying silver, the price rose to 33½d., the highest realised since 1893, when the average stood at 36½d.

6. **Employment in Silver Mining.**—The number of persons employed in silver mining during each year of the period 1901 to 1911 is given below:—

NUMBER OF PERSONS EMPLOYED IN SILVER MINING, 1901 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Terr.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.	No.
1901...	6,298	...	40	150	...	2,414*	†	8,902‡
1902...	10,021	10	785	50	8	1,908	36	12,818
1908...	7,560	3	496	50	5	1,740	†	9,856
1909...	6,207	...	354	40	5	1,516	†	8,122
1910...	7,999	...	590	60	21	1,173	65	9,908
1911...	8,495	...	433	30	43	1,125	47	10,173

* Including copper miners. † Included in South Australia. ‡ Including copper miners in Tasmania.

As the table shews, the bulk of the employment was in New South Wales and Tasmania, the quantity of silver raised in the other States, excepting Queensland, being unimportant.

§ 5. Copper.

1. **Production of Copper.**—The production of copper in the various States of the Commonwealth has been influenced considerably by the ruling prices, which have undergone extraordinary fluctuations. The quantity and value of the production in earlier years and for 1907 to 1911 is shewn in the following tables:—

PRODUCTION OF COPPER, AUSTRALIA, 1881 to 1911.

State.	1881.	1891.	1901.	1907.	1908.	1909.	1910.	1911.
QUANTITY.								
N.S.W. ... { Copper	Tons.	Tons	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Ore	*	*	6,087	8,963	8,679	6,857	8,435	10,618
Victoria... { Copper	*	*	645	1,135	992	109	4,455	1,482
& Ore	*	*		88	983	17	150	36
Q'land ... { Copper	330	85	3,061	12,756	14,961	14,494	16,387	20,384
S. Aust. ... { Copper	3,824	3,551	6,736	8,763	6,152	5,776	75,199	5,922
Ore	21,638	13,239	2,353			1,345		
W. Aust. ... { Copper	...	...	...	1,602	479	833	1,281	10,654
Ore	...	...	10,157	3,727	2,503	6,959	6,309	...
Tasmania { Copper	...	...	9,730	9,035	8,833	8,638	8,864	8,308
Ore	...	...	10,029	...	185	1,588	...	...
Northern Territory	...	...	...	...	...	...	...	163
C'wealth { Copper	...	...	25,614	46,019	44,167	36,598	40,166	57,567
Ore	...	...	23,184			10,018	10,914	

* Not available.

† Including 97 tons of copper, Northern Territory.

VALUE.

	£	£	£	£	£	£	£	£
New South Wales...	227,667	119,195	412,292	727,774	502,812	424,737	486,257	590,102
Victoria ...	8,186	216	...	2,356	3,928	44	450	2,088
Queensland ...	19,637	3,554	194,227	1,028,179	893,535	853,196	932,469	1,151,351
South Australia ...	418,296	235,317	500,077	705,031	345,968	342,329	*307,316	332,500
Western Australia	...	4,463	75,246	203,376	57,091	104,644	95,928	78,118
Tasmania ...	...	...	1,026,748	869,665	609,651	608,038	566,972	408,649
Northern Territory	...	...	...	...	...	...	...	1,470
Commonwealth ...	673,786	362,745	2,208,590	3,536,382	2,412,985	2,332,988	2,389,412	2,564,278

* Including £1196, Northern Territory.

A short account of the discovery of copper in the different States is given in preceding Year Books.

2. **Sources of Production.**—(i.) *New South Wales.* The principal seat of the copper-mining industry at the present date is in the Cobar district, the value of the deposits there being first recognised in 1869. The value of the output from this district in 1911 was £370,109, out of a total for the State of £590,102. Operations at the Great Cobar Mines were to some extent interfered with in the early months of the year owing to lack of skilled labour, but the shortage in production was more than counterbalanced by the increased output later, the total for 1911 being 6548 tons of copper as compared with 6248 in 1910. Owing chiefly to the low price of copper, and the lack of railway facilities, the Nymagee, Mount Hope and Girilambone Mines remained closed down, while operations were conducted on a limited scale only at Shuttleton.

From the Grafton Company's mine at Cangai the output was valued at £33,288, as compared with £41,477 in the preceding year. The Kylvie mine, in the Cooma division, contributed materially to the total output, the production from this mine being valued at £66,483. The Electrolytic and Refining and Smelting Company of Australia Limited, established at Port Kembla, had a successful year, the output of electrolytic copper being 13,132 tons, most of which was made from matte and ore produced in other states, chiefly in Queensland.

(ii.) *Victoria.* The copper produced in this State was obtained from the mine near Walhalla operated by the Gippsland Copper, Platinum, and Gold Mining and Smelting Company. During 1911 the company smelted 1116 tons of copper ore and 18 of auriferous quartz, and from the resultant 91 tons of matte, copper was produced to the value of £2088, silver valued at £65, gold at £220, and platinum at £989.

(iii.) *Queensland.* The yield in this State amounted in 1911 to 20,384 tons, valued at £1,151,351, to which the Cloncurry field contributed 8511 tons valued at £477,346. From the Mount Elliott mine 5446 tons of copper were obtained together with 10,494 ozs. gold, and 5156 ozs. silver. The yields for the other chief centres of production in 1911 were as follows:—Mount Morgan, £297,516; Gladstone, £112,513; Rockhampton, £107,872; Etheridge, £62,197; Chillagoe, £44,253.

(iv.) *South Australia.* Taking the entire period over which production extended, the yield of copper in South Australia easily outstrips that of any other State in the Commonwealth. In recent years, however, Tasmania, Queensland, and New South Wales have come to the front as copper producers, as the table on the preceding page will shew. Deposits of copper ore are found over a large portion of South Australia. The Kapunda mine, discovered in 1842 by Messrs. Dutton and Bagot, is situated fifty miles north of Adelaide, and is the oldest copper mine in the State. Up to the end of 1879 the production amounted to 70,000 tons, the metal possessing such a high standard of purity that it always obtained the highest prices in the world's markets. During the nine years 1870 to 1878 the production was valued at £157,000. The Burra Burra mine, located in 1845 by a shepherd named Pickett, is situated about 100 miles north of Adelaide. The original capital invested in this mine was £12,320 in £5 shares, on which no call was ever made, while dividends to the amount of £800,000 were paid. For many years this mine produced from 10,000 to 13,000 tons of ore, averaging 22 to 23 per cent. of copper. During the 29½ years in which the mine was worked the production was valued at £4,749,000. In 1859 as many as 1170 persons were employed on it. The mine has lain practically idle for many years, but recently there have been attempts at reworking.

Yorke's Peninsula, between Spencer's Gulf and St. Vincent's Gulf, contains a large area of copper-bearing country. The principal mines at Wallaroo and Moonta are situated a few miles from Port Wallaroo, and date back to 1860. For about thirty years the Moonta mines were worked independently, selling their ores to the Wallaroo company. During its separate existence the Wallaroo field produced about £2,600,000 worth of copper, while Moonta yielded £5,396,000, and was the first Australian mining field to produce £1,000,000 in dividends. The amalgamation took place in 1889, and since that year the united properties have produced about £4,281,000 worth of copper. The entire yield from the date of first working is estimated at about £12,500,000. The mines just enumerated represent a very small proportion only of those opened on the copper-bearing areas of the State. Owing to the depression in the price of copper in 1911 mining operations were considerably restricted, except at the old and well-established mines. The Paramatta and Yelta mines, in the Moonta district, have now been acquired by the Government for the sum of £6000.

Copper is also obtained in the Northern Territory; the actual output of ore for the year, however, was only £1470 in value. The poor result was entirely due to the low prices and high cartage rates from outlying fields from which, in the main, copper is produced.

(v.) *Western Australia.* The copper produced in this State was raised principally on the West Pilbara field, which in 1911 yielded 9082 tons, valued at £69,140. Phillips River field, which in the preceding year produced the bulk of the output, returned in 1911 a production of 13,564 tons, valued at £46,862, the falling off being due to the temporary closing of the mines of the Phillips River Gold and Copper Company. The figures shewn in the table on the preceding page refer to exports for the year.

(vi.) *Tasmania.* The quantity of blister copper and copper ore produced in Tasmania during 1911 was 8308 tons, valued at £408,649, the bulk of the production being due to the Mount Lyell Mining and Railway Co. Ltd. This company treated 261,562 tons of ore in 1911, and produced 6022 tons of blister copper, containing copper to the value of £342,966; silver, £42,831; and gold, £33,537. The Mount Balfour field raised 2280 tons of ore, valued at £22,840.

3. **Price of Copper.**—The great variation in price that the metal has undergone is shewn in the following table, which gives the average price in London and New York during 1901 and in each of the last five years. The figures are given on the authority of "The Mineral Industry."

FLUCTUATION IN VALUE OF COPPER, 1901 to 1911.

Year. —	London Price per Ton Standard Copper.	New York. Price in Cents. per lb.	
		* Lake Copper.	Electrolytic Copper.
	£	Cents.	Cents.
1901	66.79	16.55	16.11
1907	87.01	20.66	20.00
1908	59.90	13.42	13.21
1909	58.73	13.34	12.98
1910	57.05	13.04	12.74
1911	55.97	12.63	12.38

* The term "Lake" copper is used to designate all copper sold in the trade as such, regardless of the process by which it is refined.

There is no doubt that the steady rise in the price of copper from the year 1902 onwards caused a large amount of overtrading with consequent unhealthy inflation of values, while the sudden drop in 1908 was directly due to the financial panic in America. It is believed, however, that the increasing demand for the metal in electrical and other industries will, under ordinary circumstances, tend in time to establish prices on a sounder basis, and at higher rates than those quoted for the last twelve months in the table above.

4. **Relationship to World's Production.**—The world's production of copper in 1901 and during the last five years is estimated to have been as follows:—

WORLD'S PRODUCTION OF COPPER, 1901 to 1911.

Year	1901.	1907.	1908.	1909.	1910.	1911.
World's production— (short tons)	583,517	796,205	835,623	942,408	966,998	970,308

5. **Employment in Copper Mining.**—The number of persons employed in copper mining during 1901 and in each of the last five years was as follows:—

PERSONS ENGAGED IN COPPER MINING, 1901 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.	No.
1901	2,964	4	814	4,000	321	*	†	8,103‡
1907	3,764	10	3,941	4,500	611	2,614	†	15,440
1908	2,745	9	3,540	4,470	283	2,076	88	13,211
1909	2,024	2	3,241	4,450	497	2,038	54	12,306
1910	2,286	40	2,418	4,150	559	2,042	49	11,544
1911	2,151	57	2,458	4,030	317	1,565	29	10,607

* Included with silver miners. † No returns. ‡ Excluding Tasmania.

§ 6. Tin.

1. **Production of Tin.**—The development of tin mining is, of course, largely dependent on the price realised for the metal, and, as in the case of copper, the production has been subjected to somewhat violent fluctuations. The table below shews the production in each of the Commonwealth States during the years 1881, 1891, 1901, and 1907 to 1911:—

TIN PRODUCED IN AUSTRALIA, 1881 to 1911.

State.	1881.	1891.	1901.	1907.	1908.	1909.	1910.	1911.
QUANTITY.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales { Ingots	5,824	1,454	648	1,331	954	951	847	958
{ Ore	609	203	11	583	841	992	1,021	970
Victoria ... Ore	†	†	77	104	79	69	41	33
Queensland ... Ore	†	†	1,661	5,140	4,885	3,326	2,953	3,091
West Australia Black tin	†	†	734	1,502†	1,093†	698†	500†	495
Tasmania ... Ore	†	†	1,790	4,343	4,521	4,511	3,701	3,953
Northern Territory Ore	†	†	81	436	441	427	364	239
Commonwealth { Ingots,	†	†	5,002	13,459	12,814	10,994	9,427	9,739
{ ore, etc.								
VALUE.								
	£	£	£	£	£	£	£	£
New South Wales... { Ingots	531,303	124,320	76,080	229,607	126,292	127,089	127,700	307,089
{ Ore	37,492	9,643	464	63,698	79,155	83,940	100,456	
Victoria ... Ore	7,334	5,092	4,181	10,531	6,070	7,067	3,706	3,417
Queensland ... Ore	193,699	116,387	98,723	496,766	341,566	244,927	243,271	307,847
West Australia Black tin	...	10,300	40,000	166,139	83,595	65,959	45,129	55,220
Tasmania ... Ore	375,775	293,170	212,542	501,681	421,580	418,165	399,393	513,500
Northern Territory Ore	...	1,938	5,586	41,365	35,876	32,741	31,113	22,900
Commonwealth ...	1,145,603	560,750	432,576	1,509,787	1,094,134	979,888	950,768	1,209,973

* Dressed tin ore, about 70% tin. † Tin ingot and ore. ‡ Not available.

2. **Sources of Production.**—(i.) *New South Wales.* The bulk of the yield in New South Wales comes from the Tingha district, the production in 1911 being £143,684, out of a total for the whole State of £307,089. Of the total production in 1911, £208,095, or about 68 per cent., represents the value obtained by dredging. During the twelve years ending in 1911, the tin won by dredging amounted to 10,566 tons, valued at £1,049,255. In the Emmaville division the yield of ore was estimated at 806 tons, valued at £94,784, the increase on the previous year's return being due to the satisfactory results of dredging. In addition to smaller quantities won in other divisions, it may be noted that a certain amount of tin is obtained by fossickers, in search of gold, on the beach sands in the Clarence and Richmond district.

(ii.) *Victoria.* In Victoria lode tin has been discovered at Mt. Wills, Beechworth, Eldorado, Chiltern, Stanley, and other places in the north-eastern district; and stream tin has been found in a large number of places, including those just mentioned in the north-eastern district. The bulk of the production last year was obtained by dredging and hydraulic sluicing at Tallandoon.

(iii.) *Queensland.* The high price of the metal during 1911 was responsible for renewed activity in tin mining, particularly in the Herberton district, where there was increased development in existing mines, while great attention was devoted to recent discoveries. The yield for this district amounted in 1911 to £199,177. From the other chief districts the yields were as follows:—Chillagoe, £51,262; Cooktown, £22,559; Stanthorpe, £15,199.

(iv.) *Northern Territory.* Valuable lodes of tin are found in the Northern Territory at Mount Wells, West Arm and Bynoe Harbour, and at Horseshoe Creek, and Bur-rundie, but the deposits have not yet been exploited to the extent they deserve. In 1911 there were 231 miners engaged in tin mining in the Northern Territory, and the quantity of tin ores and concentrates exported was 239 tons.

The metal has also been discovered near Earea Dam in South Australia.

(v.) *Western Australia.* The production of tin ore and ingot for the State during 1911 amounted to 495 tons, valued at £55,220, to which the Greenbushes field contributed 411 tons, valued at £44,638, and the Pilbara field 149 tons, valued at £16,064. Production at the former field shewed increased activity during the year, but development at the latter was hampered through lack of necessary capital.

(vi.) *Tasmania.* The tin ore raised in 1911 amounted to 3953 tons, valued at £513,500, the largest contributor to the total being the Mount Bischoff Co. in the North Western Division. This company treated 204,722 tons of ore from which 1100 tons of concentrates valued at £143,000 were made. The dividends paid for the year amounted to £52,500, and the total to the end of 1911 to £2,287,500. The Mt. Bischoff Extended produced 181 tons of calcined tin oxide. In the North-Eastern Division, the Briseis Co., which employs 111 men, produced 547 tons of ore, and paid £30,000 in dividends; the Arba Co. raised 116 tons of black tin; the Pioneer obtained 573 tons, and paid £43,000 in dividends, while the South Mt. Cameron raised 88½ tons. In the Eastern Division the Anchor and Australian mines together produced 194 tons of tin oxide, and employed about 150 men. In the Western Division the Renison Bell produced 130 tons of tin, valued at £15,122, and the Boulder 54 tons, valued at £6244.

3. **World's Production of Tin.**—According to "The Mineral Industry" the world's supplies of tin during each of the last five years were obtained as follows:—

THE WORLD'S TIN SUPPLIES, 1907 to 1911.

Origin.	1907.	1908.	1909.	1910.	1911.
	Tons.	Tons.	Tons.	Tons.	Tons.
English production	4,407	5,052	5,198	5,810	4,500
Chinese exports	3,480	4,558	4,445	4,500	2,600
Straits to Europe and America ...	53,520	60,491	58,541	54,625	50,270
Straits to India and China	2,178	2,187	2,030	2,100	3,400
Australia to Europe and America ...	6,612	5,748	5,384	4,563	3,825
Banka sales in Holland	11,264	11,530	11,973	12,000	12,581
Billiton sales in Java and Holland ...	2,229	2,235	2,241	2,250	2,650
Bolivian arrivals in Europe	15,594	17,032	18,121	18,225	22,064
South Africa... ..	...	...	...	...	2,200
Total (long tons)	99,284	108,833	107,933	104,073	104,090

The main users of tin are the manufacturers of tin-plates, while it is also required in conjunction with other metals to produce bronze, brass, Britannia metal, pewter, printers' type, and solder. It is stated that the rising tendency of prices during recent years is due to the fact that production has not been commensurate with the demands for consumption, and also in some measure to the fact that for industrial purposes the metal can be replaced by others to a limited extent only.

4. **Prices of Tin.**—The average price of the metal in the London market for the year 1897 and from 1901 to 1911 was as follows:—

PRICE PER TON OF TIN, 1897 to 1911.

Year.	Price per Ton.	Year.	Price per Ton.
	£ s. d.		£ s. d.
1897	61 8 0	1906	180 12 11
1901	118 12 8	1907	172 12 9
1902	120 14 5	1908	133 2 6
1903	127 6 5	1909	134 15 6
1904	126 14 8	1910	155 6 2
1905	143 1 8	1911	192 7 0

According to "The Mineral Industry" the maximum price obtained for tin during the period 1897-1911 was reached in December, 1911, when the metal was quoted at £203 7s. 2d. per ton.

Recent advices shew that the price of tin has been steadily rising for some time, and it is expected that good values will be maintained sufficiently long to enable a number of new mines in Australia to be properly opened up.

5. **Employment in Tin Mining.**—The number of persons employed in tin mining during each of the years 1901 to 1911 is shewn below:—

PERSONS ENGAGED IN TIN MINING, COMMONWEALTH, 1901 to 1911.

Year.	N.S.W.	Victoria.	Qld.	W. Aust.	Tas.	Nor. Ter.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.
1901	1,428	...	1,148	413	1,065	...	4,054
1907	3,173	87	2,582	1,003	1,828	554	9,227
1908	2,456	53	2,140	614	1,588	384	7,235
1909	2,037	48	2,158	406	1,576	355	6,580
1910	2,028	25	1,932	326	1,598	322	6,231
1911	2,225	34	1,860	321	1,755	280	6,475

§ 7. Zinc.

1. **Production of Zinc.**—The production of spelter is practically confined to the Broken Hill district of New South Wales, where zincblende forms one of the chief constituents in the enormous deposits of sulphide ores.

Gratifying results have been achieved in the work of the profitable extraction of the zinc contents of the large heaps of accumulated tailings and from the ore raised on the Broken Hill field. The year 1909 witnessed the passing of this problem out of the experimental stage, and the practical solution of the difficulty which has confronted the mining companies for many years. At present not only is the zinc being obtained in a marketable form, but the silver and lead contents are being turned to profitable account. During 1911 the various process plants on the field were all in continuous operation, and improvements were effected tending towards simplicity of construction and increased capacity. In 1899 the exports of zinc (spelter and concentrates) amounted to 49,879 tons; in 1909 they totalled 373,906 tons, valued at £1,041,280; and in 1911, 516,378 tons, valued at £1,414,980, the great bulk of the production being obtained from tailings. The following table shews the production of zinc in New South Wales from 1889 to 1911:—

NEW SOUTH WALES.—PRODUCTION OF ZINC, 1889 to 1911.

Year.	Quantity of Zinc (Spelter and Concentrates) Produced.	Value.	Year.	Quantity of Zinc (Spelter and Concentrates) Produced.	Value
	Tons.	£		Tons.	£
1889	97	988	1908	276,720	600,883
1891	219	2,622	1909	373,906	1,041,280
1899	49,879	49,207	1910	468,627	1,289,634
1907	237,219	536,620	1911	516,378	1,414,980

The total quantity of zinc (spelter and concentrates) produced in New South Wales to the end of the year 1911 was 2,299,199 tons, valued at £5,773,671. The average price of spelter per ton in the London market during the last seven years was £23 16s. 10d. ranging from £20 3s. 3d. in 1908 to £27 0s. 5d. in 1905. The price in 1911 was £23 5s. 6d.

During the year 1911, 12 tons of zinc, valued at £189, were raised in Western Australia.

§ 8. Iron.

1. **General.**—The fact that iron-ore is widely distributed throughout the Commonwealth has long been known, and extensive deposits have been discovered from time to time at various places in New South Wales, Queensland, South Australia, Western Australia, and Tasmania. It will appear, however, from what is stated below, that until quite recently, little has been done in the way of converting these deposits into a marketable commodity.

(i.) *The Manufactures Encouragement Act 1908.* It was hoped that the passing by the Commonwealth Parliament of the Manufactures Encouragement Act, which came into force on the 1st January, 1909, would assist in firmly establishing the iron industry in Australia on a remunerative basis, both in the smelting of pig iron and in the production of bar iron and steel from Australian ore. The Act referred to provides for the payment of bounties on iron in accordance with the terms set out hereunder:—

BOUNTIES PAYABLE ON AUSTRALIAN PIG IRON, BAR IRON, STEEL, etc.

Description of Goods.	Rate of Bounty.	Total Amount which may be authorised.	Date of Expiry of Bounty.
CLASS 1.			
Pig iron made from Australian ore ...	12s. per ton	£150,000	30th June, 1914
Puddled bar iron made from Australian pig iron ...	"		
Steel made from Australian pig iron ...	"		
CLASS 2.			
Galvanised sheet or plate iron or steel (whether corrugated or not) made from Australian ore	10 per cent. on value	£30,000	30th June, 1912
Wire netting, not being prison made and being made from Australian ore or from wire manufactured in the United Kingdom	10 per cent. on value		
Wire made from Australian ore	10 per cent. on value		
Iron and steel tubes or pipes (except riveted or cast), not more than six inches internal diameter, made from Australian pig iron or steel	10 per cent. on value		

Particulars of the bounties paid under the above Act during the half-year ended the 30th June, 1912, and during the financial years 1909-10, 1910-11 and 1911-12, are shewn in the following statement:—

**PARTICULARS OF BOUNTIES PAID ON AUSTRALIAN PIG IRON, BAR IRON,
STEEL, etc., 1909 to 1912.**

Description of Goods.	Steel made from Australian Pig Iron.	Puddled Bar Iron made from Australian Pig Iron.	Pig Iron made from Australian Ore.	Galvanised Sheet Iron made from Australian Ore.	Wire netting made from wire manufactured in the United Kingdom	Total.
	£	£	£	£	£	£
Half-year ended 30th June, 1909	575	568	2,314	192	.....	3,649
1909-10	1,491	1,254	23,510	287	6,036	32,578
1910-11	1,940	2,080	20,462	121	4,824	29,427
1911-12	723	671	15,611	74	5,968	23,047
Total	4,729	4,573	61,897	674	16,828	88,701

So far New South Wales is the only State where bounty has been claimed, and the above figures, taken in conjunction with those in the succeeding table, show that production has not been as rapid as might have been expected.

2. Production of Iron.—(i.) *New South Wales.* Reference to the extent of the deposits of iron ore in the State, and the events leading up to the establishment of ironworks at Lithgow will be found in earlier issues of the Year Book (see No. III., p. 508). During 1911 the following materials were received at the blast furnace:—Iron ore, 58,206 tons; limestone, 23,921 tons; and coke, 45,178 tons. The output was 36,354 tons of pig iron, valued at £145,416, while 4838 tons of steel ingots were also manufactured. The following table shews the quantity and value of finished iron, pig iron, etc., made in New South Wales during the last seven years, chiefly from scrap iron, but since 1908 partly from the smelting of iron ore:—

NEW SOUTH WALES.—PRODUCTION OF IRON, 1905 to 1911.

Particulars.	1905.	1906.	1907.*	1908.†	1909.‡	1910.§	1911.§
Quantity Tons	4,447	8,000	29,902	40,207	29,762	40,487	36,354
Value ... £	85,693	112,848	178,632	118,224	106,357	161,948	145,416

* Includes 18,631 tons pig iron, valued at £80,550, produced from 34,500 tons of iron ore raised within the State. † Includes 30,393 tons pig iron, valued at £93,777, from 51,206 tons of ore raised within the State. ‡ Includes 26,762 tons pig iron, valued at £100,357, from 46,740 tons of iron ore raised within the State. § From ore raised within the State.

The falling-off in 1911 was due to industrial troubles at the ironworks during the last half of the year.

The bounty paid in 1910 and 1911 on iron and steel made from ores mined in New South Wales was as follows:—

BOUNTY PAID ON IRON AND STEEL, NEW SOUTH WALES, 1910 and 1911.

Description.	1910.		1911.	
	Tonnage.	Bounty.	Tonnage.	Bounty.
		£		£
Pig iron	40,326.5	24,196	24,658	14,795
Puddled bar iron	3,383.5	2,036	1,789	1,073
Steel	3,410.0	2,046	2,633	1,580
Total	47,120.0	28,278	29,080	17,448

It is stated that a large proportion of the ore has been found to yield 68½ per cent. metallic iron, and the Broken Hill Proprietary Co. proposes to erect extensive works at Newcastle, New South Wales, for the purpose of manufacturing iron from this ore.

A quantity of iron oxide is purchased by the various gasworks for use in purifying gas, the output in New South Wales being drawn chiefly from the deposits at Port Macquarie, while smaller quantities are obtained from Mittagong, Goulburn and Moruya. During 1911 the quantity raised was 1586 tons, valued at £2377, while the total output to the end of that year was 19,939 tons, valued at £25,984. The quantity of ironstone disposed of for flux in New South Wales during 1911 exhibits a decrease, since the requirements of the smelting companies were diminished, owing to suitable ores being obtained. In 1911 the quantity raised was 1216 tons, valued at £861, as against 1648 tons, valued at £1321, in the preceding year.

(ii.) *Victoria.* Iron ore has been located at various places in Victoria, particularly at Nowa Nowa, in the Gippsland district, and at Dookie. A blast furnace was erected in 1881 near Lal Lal, on the Moorabool River, and some very fair quality iron was produced, which was used for truck wheels and stamper shoes in the Ballarat mines. The fall in the price of the metal, however, led to the closing of the works. In his report for 1905 the Secretary for Mines states that without special assistance to the industry there does not seem to be any prospect of the deposits being cheaply worked.

(iii.) *Queensland.* Queensland possesses some extensive deposits of iron ore, which is mined chiefly for fluxing purposes in connection with the reduction of gold and copper ores. During the year 1911, 20,639 tons of ironstone, valued at £11,157, were raised, the bulk of the production being in the Rockhampton and Cloncurry districts.

(iv.) *South Australia.* In South Australia iron ore is raised for fluxing purposes only, although the State possesses some rich deposits capable of being mined for an indefinite period. The best known deposit is the Iron Knob, a veritable hill of iron of high percentage, situated about forty miles W.S.W. from Port Augusta. The estimated quantity of iron ore in sight at the Iron Knob and Iron Monarch has been set down at 21,000,000 tons.

(v.) *Western Australia.* This State has some very rich deposits of iron ore, but owing to their geographical position, the most extensive fields at the present time are practically unexploited, the production in the State being confined chiefly to that needed for fluxing purposes. The Murchison field possesses some extensive deposits of high-grade ore. There are also deposits on Koolan Island at Yampi Sound.

(vi.) *Tasmania.* The existence of large quantities of iron ore in Tasmania was noted as far back as 1822, when Surveyor-General Evans alluded to the "surprising abundance of iron within a few miles of Launceston." A company known as the Tasmanian Charcoal Iron Company was formed to work these deposits, and commenced operations in June, 1876. Unfortunately, however, the presence of chromium rendered the pig iron so hard and brittle that the works had to be abandoned. Extensive deposits of specular iron ore are also found in the neighbourhood of the Blythe and Gawler Rivers. The total production of iron ore in 1908 was 3600 tons, valued at £1600, and

was all raised by the Tasmanian iron mine at Penguin, but owing to the closing down of that mine in 1909, there has been no further production. Iron pyrites for the manufacture of sulphuric acid, and in connection with manures, is produced on the West Coast. During 1911 the Mount Lyell Co. raised 9112 tons, valued at £3595.

(vii.) *World's Production of Iron, 1911.* The quantity of iron produced in Australia is but a very small proportion of the world's production, which in 1911 amounted to 63,252,000 metric tons (pig iron). The leading position for magnitude of production is held by the United States, which in 1911 produced 24,028,000 tons, compared with Germany's 15,280,000 tons, and the United Kingdom 9,875,000 tons. The position of the three countries named is similar to what it has been for several years past.

§ 9. Other Metals.

1. **Aluminium.**—The ores from which aluminium is chiefly made in other countries are widely distributed in great abundance in New South Wales in the form of hydrous silicate of alumina, which occurs in all clays. In the form of bauxite or hydrous sesquioxide, it is found at Emmaville, Inverell, and Wingello, its existence being first recognised in the last named locality in 1889. The metal, however, has not been manufactured locally.

2. **Antimony.**—This metal is widely distributed in New South Wales, and has been found native at Lucknow, near Orange. Dyscrasite, a silver antimonide, has been found in masses up to one ton in weight in the Broken Hill lodes. Large quantities of antimony are obtained in the Hillgrove district, and deposits are being worked in the Port Macquarie Division and at Yulgilbar in the Copmanhurst Division. It has also been found at various places in Victoria, chiefly in association with gold. In 1911 the export of antimony metal and ore from New South Wales amounted to £2010. The total quantity of antimony ore raised in New South Wales up to the end of 1911 was 17,463 tons, valued at £304,869. Comparatively little attention was given to mining for antimony in New South Wales during 1911 owing to the low price ruling. The metal occurs in large quantities in the Hillgrove division, and can readily be mined extensively should the price warrant operations. The production of antimony ore in Victoria during 1911 amounted to 743 tons, valued at £8928. The ore was raised by a syndicate operating at Costerfield. In Queensland extensive deposits were discovered at Neerdie, in the Wide Bay district, during 1872, also at Wolfram Camp on the Hodgkinson field, on the Palmer River, in the Ravenswood district, and on the Mitchell River in the Herberton district. A small quantity valued at £72 was produced in 1911. In Western Australia good lodes of stibnite carrying gold have been found in the Roeburne district.

3. **Arsenic.**—In the form of arsenopyrite, arsenic is of wide distribution in Victoria, but the deposits are worked to a limited extent only. At Ballarat a small quantity of the oxide is obtained from the flues of roasting furnaces. In New South Wales about 200 tons of arsenic were obtained in 1910 by the Conrad Mines Ltd. at Howell.

4. **Barium.**—A valuable lode of barium sulphate has been discovered near Dalwin, on the North Lyell railway, in Tasmania, and it is proposed to develop the deposit. It is stated that the lode is from $2\frac{1}{2}$ to 7 feet wide over a length of over 40 chains.

5. **Bismuth.**—This metal has been found in New South Wales, near Glen Innes, and also in the vicinity of Pambula, its discovery dating from 1877. A large body of bismuth-bearing ore has been located near Oberon, and was being prospected during 1910, while several trial parcels were obtained for treatment from a mine at Kirkdale, in the Yass division. About 8 tons of metal and ore, valued at £1800, were exported from New South Wales during 1911; the total quantity exported to the end of that year was 535 tons, valued at £127,327. In Queensland wolfram, molybdenite, and bismuth have been found in various parts of the Herberton and Chillagoe districts, but the chief

centres of production are at Wolfram Camp, where they have been found in association, and at Mount Carbine, where chiefly wolfram is mined. There is also a fair amount of mining at Bamford. The total production in 1911 was valued at £71,252 of which £54,163 was returned as wolfram, £5525 as bismuth, and £11,564 as bismuth and wolfram. In South Australia deposits are found at Balhannah, at Mount Macdonald, and at Winnininnie, on the shores of Spencer's Gulf. In Tasmania 14 tons, valued at £5748, were raised in 1911 at Middlesex.

6. Chromium. In New South Wales chromium is found at Bowling Alley Point, on the Peel River, in the Clarence River district, and near Gundagai. During 1911 the production came to 150 tons, valued at £300, and was obtained from a lease near Barraba. The total exports to the end of 1911 amounted to 30,812 tons, valued at £101,408. Chrome iron ore is found in Queensland in the Rockhampton district, where the Elgalla mine, at Cawarral, produced a small quantity in 1911. There was also some production from the mine near Broadmount.

7. Carnotite.—A discovery of carnotite ore was made in 1906 twenty miles E.S.E. from the Olary railway station in South Australia, and steps are being taken to test its value commercially.

8. Cobalt.—This metal was found at Carcoar in New South Wales in 1889, and subsequently at Bungonia, Port Macquarie, and various other places. There was no export of cobalt in 1911, and the total produced since 1860 amounted in value to only a little over £9000. Deposits have been noted in South Australia near Bimbourie, and South Blinman; in Western Australia at Norseman and Kanowna; and at various places in Victoria.

9. Lead.—This metal was first noted in New South Wales in 1849, when small specimens of native metal were found by the Rev. W. B. Clarke. At present lead mining *per se* is not practised to any extent in the Commonwealth, the supply of the metal being chiefly obtained in conjunction with silver. In New South Wales the lead contents of the bullion produced within the State amounted in 1911 to 17,276 tons, valued at £209,784. The total lead production to the end of 1911 was 120,941 tons, valued at £1,736,381. In Victoria oxides, sulphides, and carbonates of lead are found in the reefs of most of the goldfields. The deposits are not, however, of sufficient extent to repay the cost of working. In Queensland the deposits are worked chiefly for the silver or gold contents of the ore, the lead produced amounting to 1771 tons, valued at £23,460, of which 886 tons, valued at £11,488, were produced from the mines in the Chillagoe district, while the Etheridge, Herberton, and Charters Towers districts produced 229, 124, and 393 tons respectively. Lead ore to the value of £15,002 was exported from Western Australia in 1911. The Northampton Mineral Field reported a production for the year of 8195 tons, valued at £17,663. Complete information is not available as to the lead contents of Tasmanian silver lead ores. At one time South Australia produced a fair amount of lead, £22,303 worth being raised in 1902, but the production has rapidly decreased, the average value for the last 3 years being about £100.

10. Mercury.—In New South Wales mercury was first recorded by the Rev. W. B. Clarke in 1843. Cinnabar has been found in lodes and impregnations at various places, such as Bingara, Clarence River, etc. In the Copmanhurst division a lode yielding encouraging assays has been discovered. Up to the present the production of quick-silver has been small, the total being only a little over 1000 lbs. Lodes of cinnabar have been found in Queensland at Kilkivan, and at Black Snake, in the Wide Bay district; about four tons were produced between 1824 and 1891. Between O.K. and Mungana several shows have been prospected with encouraging results. Small quantities have been found disseminated over a large area near Willunga in South Australia.

11. **Manganese.**—Ores of this metal occur in considerable quantity in widely separated districts in New South Wales, but the low price of the metal precludes mining to any great extent, and the production to date has been trifling. In Queensland there are extensive deposits at Mount Miller, at Gladstone, and Mount Nansen, near Gympie, the product being utilised chiefly by the Mount Morgan mine. The production from the Mount Miller mine amounted in 1911 to 1149 tons of ore, valued at £4021. Small quantities of manganese ore were raised in Victoria during 1911, from mines in the vicinity of Yackandandah. Extensive deposits of the ore were mined at Boolcunda in South Australia some years ago, but latterly the production has ceased. Deposits have also been noted at Kangaroo Island, Quorn, Tumby, and various other parts of the State. In Western Australia ores of the metal are found widely scattered, the black oxide being especially plentiful in the Kimberley district.

12. **Molybdenum.**—In New South Wales molybdenite (associated with bismuth) is obtained at Kingsgate, near Glen Innes, the export in 1911 being 21 tons, valued at £2591, as compared with 48 tons, valued at £5667, in the previous year. The production in Queensland for 1911 was 100 tons, valued at £13,278, practically the whole of which was contributed by the mines in the Chillagoe field.

13. **Radium.**—(i.) It is reported that there have been several definite discoveries in Australia of the occurrence of minerals containing radium. The discovery at Olary, in South Australia, of carnotite, which is an alteration product of pitchblende, the compound from which radium is obtained, has already been referred to. In 1910 pitchblende was identified in portion of the workings at Olary, and a specimen, exhibiting a high degree of radio-activity, was obtained. This is the first authentic discovery of the mineral pitchblende in Australia. The deposits of radio-active uranium ores found at Radium Hill are now being mined, and it is hoped that they will prove of economic value as a source of radium. In another case a monazite from Pilbara, Western Australia, has been shewn to give off radium emanations. This mineral has been called "pilbarite." Yet another specimen of mineral having the composition of a secondary pitchblende has been discovered by a prospector. The exact place where this specimen was found is uncertain, but it is believed that it came from the New England district of New South Wales. It is stated that its radio-activity is very marked, the mineral being 1 per cent. more active than the Bohemian variety, and that it contains only such elements as were readily separable from one another by the methods used to obtain pure uranium and radium from Bohemian pitchblende. Lastly, it is stated that the ores obtained at the Moonta mines, South Australia, contain from one-tenth to one-fifteenth of the amount of radium found in high-grade pitchblende, and that a product having a fairly high degree of radio-activity can be extracted therefrom with comparative ease.

(ii.) **Production of Radium Bromide.**—At the end of November, 1912, a small quantity of radium bromide was produced at the Radium Hill Co.'s works at Woolwich, Sydney, this being the first occasion on which a marketable amount of this salt has been obtained outside of Europe. It is estimated by the chemist in charge that the present plant at the works is capable of providing £600 worth of radium weekly.

14. **Tungsten.**—Wolfram and scheelite, the principal ores of tungsten, are both mined to a small extent in New South Wales. During 1911 the export of wolfram was 583 tons, valued at £29,991, and of scheelite 108 tons, valued at £11,342. Wolfram was mined chiefly at Torrington, in the Deepwater division, and scheelite at Hillgrove. A mine near Omeo, in Victoria, was developed during 1909, and 17½ tons of concentrates, valued at £1070, were produced during 1911. A small quantity of concentrates was also produced at Bendoc. In Queensland, tungsten ores are found in several districts, the chief centres of wolfram production in 1911 being Chillagoe and Herberton. (See also Bismuth, page 499.) A deposit of wolfram was discovered near Yankalilla in South Australia as far back as 1893, but the production up to date has been small.

In Western Australia a deposit of wolfram has recently been discovered in the West Kimberley district, about 70 miles to the north-east of Derby; nine tons, valued at £826, were raised during 1911. Wolfram is mined in Tasmania, the production for 1911 being 70 tons, valued at £7769, obtained chiefly from the Shepherd and Murphy mine at Middlesex, and the Avoca mine. A rich lode of scheelite has been discovered on King Island in Bass Strait.

15. **Tantalum.**—Tantalite in small quantities has been found in the Greenbushes mineral field of Western Australia for some time past, but recently a lode of fairly extensive proportions was located at the Wodgina tinfield. Up to the end of 1905 the production of this mineral in Western Australia amounted to 73 tons, valued at about £10,000, but early in 1906 it was found that the supply exceeded the demand and production was temporarily stopped; in 1908 a small quantity valued at £400 was exported. About £327 worth was reported as having been raised in the Greenbushes and Pilbara fields during 1909, but none was exported owing to the entire absence of any market. No production was recorded in 1910 and 1911. Small quantities of the mineral are also produced in the Northern Territory.

16. **Uranium.**—This mineral has been discovered in South Australia in the country between Mount Painter and Mount Pitts, about 80 miles east from Farina. The uranium ores occur most frequently in the form of torbernite and autunite, and are found over a considerable area. The discovery is therefore of considerable importance, since ores of this mineral are found to a very limited extent in other parts of the world, and uranium is the chief source from which radium is derived.

In addition to the metals enumerated above there is a large number of others occurring in greater or less degree, while fresh discoveries are being constantly reported.

(B). NON-METALLIC MINERALS.

§ 10. Coal.

1. **Production in each State.**—(i). *Historical.* A historical account of the discovery of coal in each State will be found in preceding issues of the Year Book. (See No. III., pp. 515-6.)

(ii). *New South Wales.*—The production in 1911 amounted to 8,691,604 tons, valued at £3,167,165, an increase of 518,076 tons and £157,509 in value, as compared with the preceding year. Although there was no general strike, several of the mines were idle for various periods in consequence of local industrial troubles; so that, under the circumstances, the output for 1911 may be considered as highly satisfactory.

(iii). *Victoria.*—During 1911, 659,998 tons of coal were raised, an increase of 290,289 tons on the previous year. A State coal mine was established at Powlett River towards the end of 1909, and its contribution to the total production in 1911 was 506,059 tons. A railway, 27 miles in length, has been constructed from Nyora to the coal-field. There are eleven shafts at the mine from 30 to 278 feet deep and coal is being raised from five of them. The average number of men employed at the mine and surface works in 1911 was 946. The township—under the name of Wonthaggi—has been laid out on modern lines, and elaborate arrangements have been made for its lighting and water supply, while State brickworks and quarries have been established. The population of Wonthaggi was given in 1911 as 3200, and the valuation of the borough as £355,000. Other payable seams in this district outcrop about five miles away, near Cape Patterson, and it is believed that the coal-bearing area has an extent of from twelve to fifteen square miles.

(iv). *Queensland.* The number of collieries contributing to the output in 1911 was 42, and the quantity of coal raised was 891,568 tons, valued at £323,998, as against 871,166 tons, valued at £322,822, for the preceding year. The industry is at present in a

very satisfactory position in the northern State, and owing to the wide area over which the deposits stretch, practically no limit can be set to its possibilities of extension.

(v.) *Western Australia.* Six collieries were in operation on the Collie field during 1911, and the output for the year was 249,890 tons, or about 12,000 tons less than in 1910. The decrease was due principally to the sealing up of portion of the workings at the Collie Proprietary, necessitated by an outbreak of fire.

(vi.) *Tasmania.* The principal collieries in Tasmania are the Cornwall and Mount Nicholas, the former producing 24,000 and the latter 30,000 tons out of a total yield in 1911 of 57,067 tons.

The quantity and value of coal produced in each State and in the Commonwealth at various periods since 1881, are shewn in the following table:—

PRODUCTION OF COAL, AUSTRALIA, 1881 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lt'h.
QUANTITY.							
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1881	1,769,597	...	65,612	...	...	11,163	1,846,372
1891	4,037,939	22,334	271,603	...	...	42,256	4,375,622
1901	5,968,496	202,329	539,472	...	117,836	45,438	6,380,501
1907	8,657,924	138,635	653,272	...	142,373	58,391	9,681,095
1908	9,147,025	113,962	696,332	...	175,248	61,068	10,193,635
1909	7,019,879	128,573	756,577	...	214,302	66,162	8,185,593
1910	8,173,508	369,709	871,166	...	262,166	82,455	9,750,004
1911	8,691,604	659,998	891,568	...	249,890	57,067	10,550,127
VALUE.							
	£	£	£	£	£	£	£
1881	603,248	...	29,033	...	...	4,465	636,746
1891	1,742,796	19,731	128,198	...	...	17,303	1,908,028
1901	2,178,929	147,228	189,877	...	68,561	18,175	2,602,770
1907	2,922,419	79,706	222,135	...	55,138	23,556	3,302,974
1908	3,353,033	64,778	244,922	...	75,694	24,427	3,762,974
1909	2,615,596	76,945	270,726	...	90,965	26,464	3,082,696
1910	3,006,637	189,254	322,822	...	113,699	43,609	3,684,041
1911	3,167,165	301,141	323,998	...	111,154	26,214	3,929,672

The Victorian figures for 1911 include about 6000 tons of brown coal, the bulk of which was raised at Altona.

2. *Distribution and Quantity of Coal in each State.*—(i.) *New South Wales.* Estimates have from time to time been made as to the total quantity of coal available for working in the deposits in New South Wales, and while these naturally differ to some extent, they agree in placing the amount at well over a thousand million tons, without taking into consideration the deposits existing below a depth of 4000 feet. According to Mr. E. F. Pittman, the coal-bearing rocks of New South Wales may be classified as follows:—

COAL-BEARING ROCKS OF NEW SOUTH WALES.

Geological Age.	Maximum Thickness of Coal-bearing Strata.	Locality.	Character of Coal.
I. Tertiary—Eocene to Pliocene	Approx. 100 ft.	Kiandra, Gulgong, and Chouta Bay	Brown coal or lignite.
II. Mesozoic—Triassic or Trias-Jura	2,500 "	Clarence and Richmond Rivers	Coal suitable for local use only.
III. Palæozoic—Permo-Carboniferous	13,000 "	Northern, Southern and Western Coalfields	Good coal, suitable for gas, household and steaming.
IV. Palæozoic—Carboniferous	10,000 "	Stroud, Bullah Dellah.	Very inferior coal with bands; of no value.

In regard to the Tertiary deposits, it may be noted that no serious attempt has been made to use the coal as fuel in New South Wales. At Kiandra a deposit of lignite was found to possess a maximum thickness of 30 feet, but as a general rule the seams vary

from 3 to 4 feet in thickness. The Triassic or Trias-Jura deposits in the Clarence and Richmond districts contain numerous seams, but the coal is largely intersected by bands, while its large percentage of ash renders it unfit for use as fuel for industrial purposes. These beds extend under the great western plains, but the presence of artesian water precludes the possibility of their being worked. The Clarence basin extends into Queensland, and at Ipswich thick and valuable seams of coal are worked. The Hawkesbury sandstone and Wiannamatta shale, which cover a large area of the Permo-Carboniferous coal basin, also contain numerous small coal seams, but none is of sufficient extent to pay for working. It is in the Permo-Carboniferous division that the great productive coal seams of the State are found, the area which they cover being estimated at about 16,550 square miles. The deepest part of the basin is somewhere in the vicinity of Sydney, where the "Sydney Harbour Colliery" is working the top seam at a depth of 2884 feet. Towards the north, south and west the seams rise towards the surface, and outcrop in the neighbourhood of Newcastle, Bulli and Lithgow. The coal from the various districts embraced in this division differs considerably in quality—that from the Newcastle district being especially suitable for gas-making and household purposes, while the product of the Southern (Illawarra) and Western (Lithgow) is an excellent steaming coal. At the present time the Greta coal seams are being extensively worked between West Maitland and Cessnock, and this stretch of country, covering a distance of fifteen miles, is now the most important coal mining district in Australasia. The Permo-Carboniferous measures have in various places been disturbed by intrusions of volcanic rocks, which in some instances have completely cindered the seams in close proximity to the intrusive masses, while in other instances the coal has been turned into a natural coke, some of which has realised good prices as fuel.

COAL RAISED IN NEW SOUTH WALES, 1881 to 1911.

District.	1881..		1901.		1905.		1911.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£	Tons.	£
Northern ...	1,352,472	437,270	3,999,252	1,669,519	4,645,742	1,473,995	5,793,646	2,320,673
Southern ...	253,283	115,505	1,544,454	407,196	421,768	2,066,621	636,163	
Western ...	163,842	60,473	424,720	102,214	429,718	107,698	831,337	210,329
Total ...	1,769,597	603,248	5,968,426	2,178,929	6,632,138	2,003,461	8,691,604	3,167,165

Sydney Harbour Colliery. So far back as 1847 the Rev. W. B. Clarke expressed the belief that workable coal would be found in the strata below Sydney, a belief that was also held by subsequent geologists, who based their contentions on stratigraphical and palæontological evidence. The later geologists urged that the Illawarra coal measures of the South Coast district were identical with the Newcastle measures of the Northern district, although it was agreed that the deposits in the neighbourhood of Sydney would probably be found at a considerable depth. Borings were made in several localities close to Sydney, and in 1891 a drill put down at Cremorne Point in Sydney Harbour passed through a seam of coal seven feet four inches thick at a depth of 2801 feet. Unfortunately the site of the bore happened to be in the vicinity of a volcanic dyke, which had cindered the coal near the locality of its intrusion. A second bore was commenced in July, 1892, and in November, 1893, a seam of excellent coal, ten feet three inches thick, was reached at 2917 feet. The results attained led to the formation of a company which acquired land at Balmain, and expended a considerable sum of money in the purchase of plant suitable for working coal at such a great depth. Sinking operations were commenced in June, 1897, and coal was struck at a depth of about 2900 feet on the 21st November, 1901. Various causes tended to retard production on any considerable scale. In the first place it was found that when the coal was reached the seam was split by a band of shale and would not pay for working, and more capital was necessary before a drive could be put in to reach the payable deposit. In 1910, however, the colliery passed into other hands

and with improved financial conditions developmental work was pushed along more rapidly. A great advantage possessed by this colliery is that the largest ocean-going steamers can load their coal supplies from its wharf in the harbour. The colliery possesses considerable interest from the circumstance that its workings are amongst the deepest in the world.

(ii.) *Victoria.* The deposits of black coal in Victoria occur in the Jurassic system, the workable seams, of a thickness ranging from two feet three inches to six feet, being all in the Southern Gippsland district. The coal is of excellent quality for steaming and household purposes. The full exploitation of the Victorian coal deposits has, however, been rather severely hindered by various obstacles. In the Report of the Royal Commission on the Coal Industry, 1906, these have been summarised as follows:—(a) Labour troubles. (b) Difficulties of working arising from faults, displacements, and thin seams. (c) Increased cost of production as the workings extend. (d) The low price ruling for coal.

As pointed out in a preceding page, however, the production in 1911 was considerably in advance of that recorded in any preceding year.

Deposits of brown coal and lignite of immense extent occur in gravels, sands, and clays of the Cainozoic period throughout Gippsland, Mornington Peninsula, Werribee Plains, Gellibrand, and Barwon and Moorabool basins. In the Latrobe Valley the beds reach a thickness of over 800 feet. When dried, the material makes good fuel, but owing to its excessive combustibility and friability requires to be consumed in specially constructed grates. Attempts have been made to manufacture briquettes from the brown coal, but so far without any great measure of success. At the Melbourne and Altona Colliery Company's mine at Altona, 5914 tons of brown coal, valued at £2235, were raised in 1911.

The output of coal from the chief Victorian collieries during the last ten years was as follows:—

PRODUCTION OF COAL IN VICTORIA, 1902 to 1911.

Year.	State Coal Mine.	Outtrim Howitt Company	Jumbunna Coal Company	Coal Creek Proprietary.	Silkstone Co-operative Company	Austral Coal.	Other Companies.	Total Production.	Value.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£
1902	...	114,686	67,876	39,257	2,257	...	1,088	225,164	155,850
1903	...	20,602	18,517	20,727	4,354	...	5,661	69,861	43,645
1904	...	57,328	39,364	22,547	2,014	...	489	121,742	70,208
1905	...	71,989	49,009	27,710	1,624	...	4,804	155,136	79,060
1906	...	74,812	64,222	13,214	3,977	...	4,406	160,631	80,283
1907	...	64,083	61,755	3,762	7,565	...	1,470	138,635	79,706
1908	...	47,633	58,552	...	6,967	...	810	113,962	64,778
1909	2,946	44,156	65,945	3,265	...	10,631	1,730	128,673	76,945
1910	201,053	46,832	61,954	10,968	...	36,052	13,050	369,709	189,254
1911	506,059	28,359	57,397	4,589	...	34,607	28,987	659,998	301,141

Included in the total "for other companies" is an amount of 20,400 tons raised by the Powlett North Woolamai Collieries. The figures also include about 6000 tons of brown coal, the bulk of which was raised at Altona.

(iii.) *South Australia.* The coal from Leigh's Creek in South Australia is subject to similar disabilities to the Victorian brown coal, and until some means are devised of overcoming these, production will probably languish.

(iv.) *Queensland.* In Queensland the coal-bearing strata are of vast extent and wide distribution, being noted under the greater portion of the south-eastern districts, within 200 miles of the sea, as far north as Cooktown, and under portions of the far western interior. The Ipswich beds are estimated to occupy about 12,000 square miles of country, while the Burrum fields occupy a considerably larger area. At Callide, fifty miles west of Gladstone, a seam of coal free from bands has been struck in a shaft only sixty feet deep, and borings have proved the deposit to be of considerable magnitude.

The beds in the Cook district are estimated to comprise rather more than 1000 square miles, but coal measures extend to the south-west far beyond Laura and to the north of the railway. Extensive beds occur in the basin of the Fitzroy River, in the Broadsound district, and at the Bowen River. Amongst other places where the mineral is found may be enumerated Clermont, the Palmer River, Tambo, Winton, Mount Mulligan, and the Flinders River. Boring operations have proved the existence of seams of workable coal for some distance on both sides of the Dawson River. A bituminous coal is yielded by the Ipswich seams, those of the Darling Downs yield a cannel, while anthracite of good quality is furnished by the Dawson River beds.

The quantity and value of coal raised in Queensland at various periods since 1861 were as shewn below :—

PRODUCTION OF COAL IN QUEENSLAND, 1861 to 1911.

Year ...	...	...	1861.	1871.	1881.	1891.	1901.	1911.
Quantity	...	Tons	14,212	17,000	65,612	271,603	539,472	891,568
Value	...	£	9,922	9,407	29,033	128,198	189,877	323,998

At present coal mining in Queensland is in a very satisfactory position, the increasing volume of the trade being chiefly due to the action of the Government in granting concessions to vessels coaling at local ports.

The distribution of production during the last two years was as follows :—

QUEENSLAND COLLIERIES, 1910 and 1911.

Collieries.	1910.		1911.	
	Tons Raised.	Average Value at Pit's Mouth.	Tons Raised.	Average Value at Pit's Mouth.
Ipswich and Darling Downs ...	729,012	s. d. 6 11	709,183	6 8
Wide Bay ...	93,055	10 5½	98,827	10 10
Rockhampton ...	14,392	11 9	16,233	10 4½
Clermont ...	34,707	8 0	67,325	7 6
Total ...	871,166	7 5	891,568	7 3

The output in 1911 was distributed approximately as follows:—Bunker coal, 221,821 tons; cargo coal, 100,443; Railway and Government Departments, 316,684 tons; factories, works, etc., 252,620 tons.

(v.) *Western Australia.* The coal seams in Western Australia belong to the Carboniferous, Mesozoic, and Post-tertiary ages. Most of the coal contains a large proportion of moisture, and belongs partly to the hydrous bituminous and partly to the lignite class. The only coalfield at present worked is at Collie, in the Mesozoic beds of the south-west. The coal produced is bright and clean, but very fragile when free from moisture. The increased output for the last three years is consequent on the establishment of a bunkering trade at Bunbury and Fremantle, which has developed very satisfactorily. The production from this field since 1901 was as follows :—

PRODUCTION OF COAL IN WESTERN AUSTRALIA, 1901 to 1911.

Year ...	1901.	1905.	1906.	1907.	1908.	1909.	1910.	1911.
Quantity Tons	117,836	127,864	149,755	142,373	175,248	214,302	262,166	249,890
Value £	68,561	55,312	57,998	55,158	75,694	90,965	113,699	111,154

(vi.) *Tasmania.* In Tasmania coal occurs in the following geological periods:—

(1) Permo-Carboniferous: Lower Coal Measures. (2) Mesozoic: Upper Coal Measures. (3) Tertiary: Brown Coal and Lignite deposits. Permo-Carboniferous coal is found at Avoca, Mt. Nicholas and Fingal, Thomson's Marshes, Langloh, Seymour, York Plains, Mike Howe's Marsh, Longford, Colebrook, Schouten Island, Spring Bay and Prosser's Plains, Compton and Old Beach, Lawrenny, Longhole, Sandfly, Ida Bay, Hastings and Southport, Recherché and South Coast, Tasman's Peninsula. Deposits of lignite and brown coal are plentiful in beds of Tertiary age, but they have not been exploited to any extent. An estimate gives the approximate quantity of coal available as sixty-five million tons, of which eleven millions are in the Lower Coal Measures and fifty-four millions in the Upper Measures, exclusive of an unknown quantity in strata fringing the Central Tiers.

PRODUCTION OF COAL IN TASMANIA, 1901 to 1911.

District.	1901.	1905.	1906.	1907.	1908.	1909.	1910.	1911.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
North-western ...	2,952	1,261	1,878	1,045	...	1,543	1,720	1,496
Eastern ...	37,239	46,708	46,808	53,214	55,539	57,227	71,115	54,296
Midland ...	1,536	200	393	624	...	560	721	635
South-eastern ...	...	200	1,483	4,008	5,529	6,832	8,899	640
South-western ...	3,711	3,624	2,339					
Total ...	45,438	51,993	52,896	58,891	61,068	66,162	82,455	57,067

The bulk of the output in 1911 was raised from the Cornwall and Mt. Nicholas mines, which produced 24,060 and 30,058 tons respectively.

3. *Production of Coal in Various Countries.*—The total known coal production of the world in 1911 amounted to about 1140 million tons (exclusive of brown coal or lignite), towards which the Commonwealth contributed 10 million tons, or less than 1 per cent. The following table shews the production of the British Empire and the chief foreign countries in units of 1000 tons during each year of the period 1901 to 1910:—

COAL PRODUCTION, BRITISH EMPIRE, 1901-11.

Year.	United Kingdom.	British India.	Canada.	Australian C'wealth.	New Zealand.	Union of S. Africa.
	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.
1901 ...	219,047	6,636	5,791	6,881	1,228	712
1907 ...	267,831	11,147	9,385	9,681	1,831	2,766
1908 ...	261,529	12,770	9,720	10,194	1,861	5,137
1909 ...	263,774	11,870	9,376	8,186	1,911	5,534
1910 ...	264,433	12,047	11,526	9,759	2,197	6,351
1911 ...	271,899	12,716	11,082	10,550	2,066	6,780

COAL PRODUCTION, FOREIGN COUNTRIES, 1901-1911.

Year.	Russian Empire.	Sweden.	German Empire.	Belgium.	France.	Spain.	Austria-Hungary.	Japan.	United States.
	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.
1901 ...	16,215	268	106,795	21,856	31,126	2,609	12,895	8,885	261,875
1907 ...	25,533	300	140,685	23,324	35,411	3,637	14,881	13,656	428,896
1908 ...	25,487	300	145,236	23,179	36,044	3,823	14,843	14,587	371,288
1909 ...	26,232	243	146,397	23,140	36,519	3,799	14,868	14,806	411,432
1910 ...	24,460	238	150,372	23,532	37,030	3,751	14,834	15,429	447,854
1911 ...	22,824	307	158,164	22,683	35,023	...	15,000	15,763	443,025

Including New Zealand the production from Australasia takes second place amongst the possessions of the British Empire, British India coming first in order.

4. **Export of Coal.**—The exports of coal from the Commonwealth are practically confined to New South Wales.

The total quantity of coal of Australian production (exclusive of bunker coal) exported from the Commonwealth to other countries in 1911 was 1,687,857 tons, valued at £900,622, of which amount 1,686,482 tons, valued at £899,807, were exported from New South Wales. The quantity of bunker coal taken by overseas vessels was 1,455,683 tons, of which 1,187,968 tons were taken from New South Wales.

(i.) *New South Wales.* In the following table will be found the quantity and value of the exports at decennial intervals since 1881 and during the last five years. The figures for New South Wales are given on the authority of the Mines Department of that State, and include both bunker coal and coal exported from New South Wales to other States of the Commonwealth :—

EXPORTS OF NEW SOUTH WALES COAL, 1881 to 1911.

Year.	1881.	1891.	1901.	1907.	1908.	1909.	1910.	1911.
Quantity ... 1000 tons	1,030	2,514	3,471	5,744	6,099	4,394	4,690	5,024
Value ... £1000	417	1,307	1,682	2,662	3,021	2,234	2,459	2,664

The principal overseas countries to which coal was exported from New South Wales during the year 1911 were as shewn hereunder. The quantity and value refer strictly to exports, and exclude bunker coal :—

DESTINATION OF NEW SOUTH WALES OVERSEA EXPORTS OF COAL, 1911.

Country.	Quantity.	Value.	Country.	Quantity.	Value.
	Tons.	£		Tons.	£
Chile	619,806	338,350	Peru	64,559	34,650
Philippine Islands...	156,280	82,914	Hawaii... ..	53,201	28,999
Straits Settlements	131,029	69,655	United States ...	180,769	98,201
Fiji	33,453	16,776	India	38,165	18,924
New Zealand ...	211,160	114,474	Java	134,742	65,819

The quantity of bunker coal taken from New South Wales by overseas vessels was about 1,188,000 tons, valued at £650,000.

The distribution of the total output from New South Wales collieries during the last five years was as follows; the particulars given of amounts exported include coal shipped as bunker coal :—

DISTRIBUTION OF TOTAL OUTPUT OF NEW SOUTH WALES COAL, 1907 to 1911

Year.	Exports to Australasian Ports.	Exports to other Ports.	Local Consumption.	Total.
	Tons.	Tons.	Tons.	Tons.
1907	2,379,024	3,364,483	2,914,417	8,657,924
1908	2,715,310	3,383,366	3,048,349	9,147,025
1909	2,200,769	2,192,834	2,626,276	7,019,879
1910	2,478,497	2,211,936	3,483,075	8,173,508
1911	2,525,776	2,498,304	3,667,524	8,691,604

The figures quoted above are given on the authority of the New South Wales Mines Department. Owing to the abolition of the record of interstate trade it is impossible to give the quantities forwarded to each of the States of the Commonwealth.

5. **Consumption of Coal in Australia.**—An estimate of the consumption of coal in the Commonwealth may be arrived at by adding the imports to the home production, and deducting the exports (including bunker coal taken by oversea vessels). The following table shows the consumption of coal in Australia, computed in the manner specified, for the last five years:—

CONSUMPTION OF COAL IN AUSTRALIA, 1907 to 1911.

Year.	Quantity of Coal Consumed.			
	Home Produce.	Produce of the United Kingdom.	Produce of Other Countries.	Total.
	Tons.	Tons.	Tons.	Tons.
1907	5,954,000	3,000	12,000	5,969,000
1908	6,087,000	4,000	11,000	6,102,000
1909	5,867,000	2,000	7,000	5,876,000
1910	6,897,000	110,000	198,000	7,205,000
1911	7,407,000	7,000	4,000	7,418,000

The figures for 1910 are, of course, abnormal, the comparatively heavy importation from the United Kingdom and foreign countries being due to uncertainty in the local supply on account of the strike of coal-miners in New South Wales. Of the total importation from foreign countries, India supplied 138,000 tons, and Japan 28,000 tons.

6. **Price of Coal.**—(i.) *New South Wales.* The price of coal in New South Wales has been subject to considerable fluctuation since the date of first production. Up to the end of 1857 the average value of the total output was 11s. 10d. per ton. Next year the value had risen to nearly 15s., declining thereafter until in 1871 the price realised was 7s. From 1872 to 1879 there was a rise in value to 12s. Between 1882 and 1891 the price ranged between 8s. and 10s. From 1891 onwards there was a steady decline until 1898, when the average was 5s. 4d. Henceforward prices rose again until 1902, when 7s. 5d. was the average. A decline then set in until 1905, when the price stood at a little over 6s., followed by a rise of one penny in 1906, and a further rise of eightpence in 1907. In 1908 the average was 7s. 4d.; in 1909, 7s. 5½d.; in 1910, 7s. 4d.; and in 1911, 7s. 3d. per ton. The price of New South Wales coal depends on the district from which it is obtained, the northern (Newcastle) coal always realising a much higher rate than the southern or western product. The average rate in each district during the last five years was as follows:—

PRICE OF COAL IN NEW SOUTH WALES (PER TON), 1907 to 1911.

Year.	Northern District.	Southern District.	Western District.
	s. d.	s. d.	s. d.
1907	7 4.41	5 7.44	4 6.90
1908	8 0.78	5 10.91	4 5.52
1909	8 3.48	5 11.91	4 9.34
1910	8 1.44	6 1.76	5 5.56
1911	8 0.13	6 1.88	5 0.72

(ii.) *Victoria.* In Victoria the average price of coal up to the 31st December, 1890 was 19s. 3d. per ton. In 1895 the price was still as high as 19s. 7d. per ton. In the five years there was a serious decline.

ton. In 1901, however, there was an astonishing rise, the figure being as high as 14s. 7d. Since that year, however, the price again declined, the average for 1905 being 10s. 2d.; for 1906, 10s.; for 1907, 11s. 6d.; for 1908, 11s. 5d.; for 1909, 12s.; for 1910, 10s. 6d.; and for 1911, 9s. 8d.

(iii.) *Queensland.* Prices in the principal coal-producing districts during the last five years were as follows:—

PRICE OF COAL, QUEENSLAND, 1907 to 1911.

District.	Value at Pit's Mouth.				
	1907.	1908.	1909.	1910.	1911.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
Ipswich and Darling Downs ...	6 1 $\frac{1}{2}$	6 6 $\frac{1}{2}$	6 8 $\frac{1}{2}$	6 11	6 8
Wide Bay and Maryborough ...	8 4	9 5 $\frac{1}{2}$	9 7 $\frac{3}{4}$	10 5 $\frac{1}{2}$	10 10
Rockhampton ...	11 6 $\frac{1}{2}$	11 7 $\frac{1}{2}$	11 6	11 9	10 4 $\frac{1}{2}$
Clermont ...	...	...	4 6	8 0	7 6

(iv.) *Western Australia.* The average price of the Collie (Western Australia) coal up to the end of 1901 was 9s. 4d. per ton, the price in 1901 being 11s. 7d. In 1902 the average stood at 12s. 3d., and from that time the price fell steadily until 1906, when it was 7s. 7 $\frac{1}{2}$ d. per ton. In 1907, the average price was 7s. 8 $\frac{1}{2}$ d.; in 1908, 8s. 7 $\frac{1}{2}$ d.; in 1909, 8s. 5 $\frac{1}{2}$ d.; in 1910, 8s. 8d.; and in 1911, 8s. 10d. per ton.

(v.) *Tasmania.* The average price per ton of coal at the pit's mouth in Tasmania was 8s. in 1901. In 1902 it was 8s. 7d.; in 1903, 8s. 9d.; in 1904 and 1905, 9s. 8d.; in 1906, 9s. 9d.; in 1907, 1908, and 1909, 8s.; in 1910, 11s. 9d.; and in 1911, 9s. 2d.

7. *Price of Coal in other Countries.*—According to a report published by the Board of Trade the average value of coal at the pit's mouth in the five principal coal-producing countries of the world, for the five years ended 1911, was as follows:—

PRICES OF FOREIGN COAL, 1907 to 1911.

Year.	United Kingdom.	Germany.	France.	Belgium.	United States.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
1907 ...	9 0	9 8 $\frac{1}{2}$	12 3	13 8 $\frac{1}{2}$	5 11 $\frac{1}{2}$
1908 ...	8 11	10 3 $\frac{1}{2}$	12 11 $\frac{1}{2}$	13 1 $\frac{1}{2}$	5 11 $\frac{1}{2}$
1909 ...	8 0 $\frac{1}{2}$	10 2 $\frac{1}{2}$	12 5 $\frac{1}{2}$	11 8 $\frac{1}{2}$	5 7 $\frac{1}{2}$
1910 ...	8 2 $\frac{1}{2}$	9 11 $\frac{1}{2}$	12 3 $\frac{1}{2}$	11 10 $\frac{1}{2}$	5 10 $\frac{1}{2}$
1911 ...	8 1 $\frac{1}{2}$	9 9 $\frac{1}{2}$	*	12 0	5 10 $\frac{1}{2}$

* Not available.

The price of coal at the pit's mouth in the principal British possessions is averaged by the same authority as follows:—

PRICE OF COAL, BRITISH POSSESSIONS, 1907 to 1911.

Year.	British India.	C'wealth of Australia.	New Zealand.	Canada.	Union of Sth. Africa.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
1907 ...	4 8	6 10	10 7	10 8 $\frac{1}{2}$	10 2 $\frac{1}{2}$
1908 ...	5 3	7 4 $\frac{1}{2}$	10 4 $\frac{1}{2}$	10 8	6 9 $\frac{1}{2}$
1909 ...	4 8 $\frac{1}{2}$	7 6 $\frac{1}{2}$	10 10 $\frac{1}{2}$	10 10 $\frac{1}{2}$	6 3 $\frac{1}{2}$
1910 ...	4 1	7 6 $\frac{1}{2}$	11 1 $\frac{1}{2}$	10 8 $\frac{1}{2}$	5 10 $\frac{1}{2}$
1911 ...	3 11 $\frac{1}{2}$	7 5 $\frac{1}{2}$	10 10 $\frac{1}{2}$	10 9	5 8 $\frac{1}{2}$

8. **Employment and Accidents in Coal Mining.**—The number of persons employed in coal mining in each of the States during the year 1911 is shewn below. The table also shews the number of persons killed and injured, with the proportion per 1000 employed, while further columns are added shewing the quantity of coal raised for each person killed and injured, this being a factor which must be reckoned with in any consideration of the degree of risk attending mining operations.

Returns published by the Board of Trade, England, give the total known number of persons engaged in mining and quarrying throughout the world as $6\frac{1}{2}$ millions, more than one-half of whom were employed in coal mining, the number in the United Kingdom being 1,033,000; the United States, 725,000; Germany, 694,000; France, 197,000; Belgium, 144,000; Austria, 131,000; and India, 116,000.

Recent returns shew the rate in the United Kingdom in respect of deaths through accidents in coal mines as 1.43, and for the British Empire 1.48 per 1000 persons employed in coal mines. For France the rate is given as 1.17, for Germany 2.30, and the United States 3.35. For foreign countries generally the rate is stated at 2.48 per 1000.

EMPLOYMENT AND ACCIDENTS IN COAL MINING, 1911.

State.	Persons Employed in Coal Mining.	No. of Persons.		Proportion per 1000 Employed.		Tons of Coal Raised for Each Person.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales ...	17,375	15	92	0.85	5.21	579,000	94,000
Victoria ...	1,754	...	23	...	13.11	...	3,000
Queensland ...	1,981	4	44	2.02	22.21	223,000	20,000
Western Australia ...	463	...	50	...	108.00	...	50,000
Tasmania ...	189	...	1	...	5.30	...	57,000
Commonwealth	21,762	19	210	0.87	9.65	355,000	50,000

§ 11. Coke.

1. **Production of Coke.**—Notwithstanding the large deposits of excellent coal in Australia, there is at the present time a fairly considerable amount of coke imported from abroad, the oversea import during the year 1911 amounting to 22,252 tons, valued at £23,429, the bulk of which came from the United Kingdom, Belgium, and Germany, and was taken chiefly by South Australia, Victoria, and Western Australia. The table hereunder gives the production in New South Wales during the last five years.

COKE MADE IN NEW SOUTH WALES, 1907 to 1911.

Year.	1907.	1908.	1909.	1910.	1911.
Quantity ... Tons	254,609	283,873	204,274	282,337	264,687
Value, total ... £	159,316	199,933	137,194	189,069	184,337
Value per ton ...	12s. 6d.	14s. 1d.	13s. 5d.	13s. 4d.	13s. 11d.

The falling-off in the returns for 1909 is, of course, due to the shortage of supplies occasioned by the coal strike.

A small quantity of coke is made in Queensland, but the bulk of that used in ore reduction is imported, mainly from New South Wales. The following table shews the amount manufactured locally, and the amount imported during the last five years; the quantities imported include shipments landed from other States of the Commonwealth.

QUEENSLAND—COKE MANUFACTURED LOCALLY AND IMPORTED, 1907 to 1911.

Year.	1907.	1908.	1909.	1910.	1911.
Manufactured locally tons	8,280	10,684	8,633	11,188	35,025
Imported "	34,013	58,804	55,559	*32,054	†

* Nine months only. - † Not available.

The development in smelting operations in Queensland is reflected in the increased consumption of coke. It must be understood that the coke referred to above is the production of coke-making establishments only, and does not include the inferior article produced at gasworks.

§ 12. Oil Shale and Mineral Oils.

1. **Production of Shale.**—(i.) *New South Wales.* As pointed out by Mr. E. F. Pittman, the name kerosene shale has been rather inaptly applied to a variety of torbanite, cannel, or boghead mineral found at various geological horizons in New South Wales. The mineral does not, as a rule, split in parallel layers, the fracture being rather of a conchoidal type. Pure samples have been found to contain over 89 per cent. of volatile hydro-carbons and over 5 per cent. of fixed carbons. The discovery of the mineral in New South Wales dates probably from 1827, although the first authentic mention by a scientific observer dates from 1845, when its occurrence in the Hartley Vale district was noted by Count Strzelecki. The mineral has been found at several places in the Upper Coal Measures and in at least two in the Lower Carboniferous. Production on anything like a large scale commenced in 1868, when about 17,000 tons, valued at £48,000, were raised. The production in 1911 amounted to 75,104 tons, valued at £36,980, as compared with 68,293 tons, valued at £33,896, in 1910. With the exception of 9000 tons obtained near Murrurundi in the northern district, the whole of the output for 1911 was won in the Western District, chiefly from the mines of the Commonwealth Oil Corporation at Wolgan, and New Hartley, near Capertee. The increased production in the Northern district is due to the establishment of oil works at Murrurundi and a refinery at Hamilton by the British Australian Oil Company.

(ii.) *Victoria.* Up to the present no extensive deposit of oil shale has been located in Victoria.

(iii.) *Queensland.* Deposits of oil shale are known to exist at various localities in Queensland, and what is believed to be a payable oil-bearing area has been located near Roma. In 1907 a contract was let for sinking a bore at this place to search for artesian water, natural gas, or petroleum, to a depth of 4500 feet. In October, 1908, when the bore had reached a depth of 3702 feet, a flow of gas, estimated at over 1,000,000 cubic feet per day, was struck and became ignited accidentally. The fire was extinguished, and after an extra length of casing had been put down the gas was apparently shut off from below. It was then intended to continue the boring till the stipulated depth of 4500 feet was reached, but up to the present this has not been carried out.

(iv.) *South Australia.* In this State large areas of bituminous shale, of which the boundaries are only approximately known, occur at Leigh's Creek and Lake Phillipson. Reference to the mineral known as coorongite is made in sub-section 13. Excellent specimens of bitumen have been discovered on Kangaroo Island, and it is believed that they are the product of a petroleum-bearing area which it is proposed to test by boring.

(v.) *Western Australia.* A deposit of carbonaceous shale of considerable thickness is known to exist at Coolgardie, but the mineral has not yet been raised in any quantity.

(vi.) *Tasmania.* Tasmanite shale has been discovered in the basins of the Mersey, Don, and Minnow Rivers, and the Government geologist estimates the probable capacity of the beds at 12,000,000 tons. The crude oil content of average quality shale has been estimated at 40 gallons to the ton. A small quantity of shale was raised in 1910, but there was no production in 1911. At present mining for the product is only in the developmental stage, but there is apparently no reason why the industry should not in time become of considerable importance.

2. **Export of Shale.**—In 1911 New South Wales exported 6245 tons of shale, valued at £11,609, of which 5124 tons were sent to the Netherlands.

3. **Shale Oils Bounties.**—The Shale Oils Bounties Act 1910 provides for the payment of bounties on certain goods manufactured in Australia from Australian shale on or after the 1st July, 1910, and before the 1st July, 1913. The total amount to be made available for bounties under this Act is £50,000. Particulars are given in the following tabular statement :—

COMMONWEALTH SHALE OILS BOUNTIES—AMOUNT PAYABLE.

Description of Goods.	Rate of Bounty.	Maximum Amounts which may be paid during the Financial Year 1910-11.	Maximum Amounts which may be paid during each of the Financial Years 1911-12 and 1912-13.	Date of Expiry of Bounty.
Kerosene*	2d. per gallon.	£ 8,000	£ 16,000	30th June, 1913.
Refined paraffin wax	2s. 6d. per cwt.	2,000	4,000	

* The product of shale, having a flashing point of not lower than 73 degrees Fahrenheit determined by the "Abel Pensky" test apparatus in manner prescribed.

During the year ended 30th June, 1912, the Commonwealth Oil Corporation Limited, operating at Hartley Vale, New South Wales, received bounty on kerosene to the amount of £2629, and on refined paraffin wax to the amount of £739.

§ 13. Other Non-Metallic Minerals.

1. **Alunite.**—Probably the most remarkable deposit of alunite in the world occurs at Bullahdelah, in the county of Gloucester, New South Wales, a large proportion of a low range of mountains in the district being composed of this mineral. The deposits are worked by quarrying, and up to the end of 1911, 35,611 tons had been exported, valued at £105,843, the exports for the year 1911 being 1006 tons, valued at £9795. Supplies of accessible mineral having been largely depleted, the company which owns the quarries is now endeavouring to locate further deposits of a sufficiently high grade to pay for working.

It is reported that large deposits of a high-class alunite have been discovered near Sunbury, Victoria.

2. **Asbestos.**—This substance has been found in various parts of Australia, but up to the present has not been produced in any considerable quantity. In New South Wales the deposits at Jones' Creek, in the Gundagai division, were opened up during the year 1909 and a trial parcel of 15 tons shipped to Germany. There was, however, no record of production in 1911. In Western Australia what may prove to be a valuable deposit of the fibrous chrysolite variety has been located at Tambourah, on the West Pilbara gold-field, and in 1909 £154 worth of this mineral was raised. In 1899 Tasmania raised 200 tons, valued at £363, but there has been no production during the last ten years.

Deposits of asbestos of the mountain leather and mountain cork varieties have recently been discovered at Oodlawirra in South Australia.

3. **Barytes.**—In New South Wales during 1911 about 290 tons of barytes, valued at £910, were obtained at Bethungra, in the Cootamundra division, while 80 tons were raised at Cobargo.

4. **Clays and Pigments.**—Valuable deposits of clays and pigments of various sorts are found throughout the Commonwealth. There is a considerable local production of earthenware, bricks, and tiles, but the finer clays have not as yet been extensively used. It is stated that kaolin of a high class has been discovered at Dunbille, near Murwillumbah, in New South Wales; during 1909 these deposits were being opened up, and parcels aggregating 30 tons realised £37 10s., but there was no production in 1911. Deposits of steatite near Wallendbeen were worked during 1911, the quantity disposed of during the year amounting to 83 tons. In Victoria 371 tons of kaolin, valued at £440, were raised during 1911, of which 335 tons were raised at Egerton, and the balance at Llandeilo near Gordons. In Queensland 5812 tons of fireclay, valued at £2325, were mined during the year 1911 in the Mount Morgan district. On Kangaroo Island, South Australia, where, it is stated, the first pottery mill in the Commonwealth was erected, there are vast deposits of felspar, china stone, silica, and firebrick clay. There are also very extensive deposits of fireclay near Ardrossan on the Yorke Peninsula, and it is stated that a syndicate has recently been formed to work these deposits. Porcelain and other clays of good quality have been found in the Kingston district in Tasmania. Deposits of ochre have been opened up at Dubbo and Wellington in New South Wales, and ochres and pigments of excellent quality have been produced therefrom. Extensive deposits of iron oxide, giving a return of 80 per cent. ochre, have recently been discovered near Oodlawirra in South Australia.

5. **Coorongite.**—This peculiar indiarubber-like material was first noted many years ago near Salt Creek and in the vicinity of Coorong Inlet, in South Australia. It was thought that the substance owed its origin to subterranean oil-bearing strata, but so far the search for petroleum has not been attended with success.

6. **Fuller's Earth.**—A deposit of this mineral has been located at Boggabri, in New South Wales, and a company has been formed to work it. During 1911 a small quantity, valued when treated at £5 12s. 6d. per ton, was produced. It is hoped to considerably increase the output in 1912 and to enter the export market, as the local article is said to be equal in quality to the foreign product. The deposit, which is of considerable extent, is situated in close proximity to the railway, and can therefore be handled very cheaply.

7. **Graphite.**—Graphite is found in New South Wales near Undercliff Station, in the county of Buller, but the deposit is not sufficiently pure to prove remunerative. A small quantity of ore was forwarded in 1911 to England from a site on the Bookookoorara in the Wilson's Downfall Division. In Victoria the mineral occurs in Ordovician slates in several of the goldfields, but is not worked. In Queensland graphite was raised some years ago by the Graphite Plumbago Company at Mt. Bopple, near Netherby, on the Maryborough-Gympie line. There is an extensive deposit of the mineral at Mt. Bopple, but the quality is rather inferior. In Western Australia a company has been formed to work deposits near Bunbury.

8. **Gypsum.**—This mineral is found at various places in the Commonwealth. It occurs in two forms, large crystals, and a floury earth consisting of minute crystals and known as "copi." Both forms are exceedingly pure. It is largely used as a natural manure and to some extent in the manufacture of Portland cement. Gypsum, or hydrous sulphate of lime, when burnt forms plaster of Paris, but in spite of the abundant supply of suitable material it has not yet been used for this purpose.

9. **Tripolite, or Diatomaceous Earth.**—Although tripolite has been found at Barraba, Cooma, Wyralah, and in the Warrumbungle Mountains in New South Wales, the deposits have not yet been worked commercially on any considerable scale. From the

deposits at Bunyan, in the Cooma division, 25 tons of diatomaceous earth, valued at £106, were produced in 1911. In Victoria there is a remarkably pure deposit at Lillieur, near Talbot, while beds of the mineral are also met with at Clunes and Portland. From the deposit at Talbot, 400 tons, valued at £1600, were obtained in 1911. A fairly extensive deposit of tripolite exists in Queensland, between Nerang and Beaudesert, but the various outcrops have as yet been only partially examined.

10. **Salt.**—Salt is obtained from salt lakes in the Western and North-western Districts of Victoria, and from salterns in the neighbourhood of Geelong. Large quantities are also obtained from the shallow salt lakes of South Australia, chiefly on Yorke Peninsula. Lake Hart, about sixty square miles in area, situated about 120 miles N.W. from Port Augusta, contains immense supplies of salt of good quality, which at present, however, owing to distance from market, possess no economic value. The salt is simply scraped from the beds of the lakes in summer time and carted to the refinery. It is stated that care must be taken not to leave too thin a crust of salt over the underlying mud, as the resultant "crop" after the winter rains will in that case be smaller than usual. A bore recently put down near Kingscote, on Kangaroo Island, revealed brine which can be profitably used by evaporation. The production of crude salt in South Australia during 1910 was 54,000 tons, valued at £27,000. In Western Australia supplies are obtained from dried-up shallow lakes and consumed locally or exported. The chief centres of production were formerly Rottnest Island, near Fremantle, and Middle Island, near Esperance, but the greater part of that now produced is obtained at Port Gregory.

11. **Natural Manures.**—Gypsum has already been referred to. See 8 *ante*. South Australia possesses deposits of rock phosphate near Port Clinton and Ardrossan on Yorke Peninsula, at Belvedere near Kapunda, and at Koorlinga, and also at many other places which have only been prospected to a small extent. The production in 1911 was valued at £5800. Reference has been made on page 499 to the pyrites produced by the Mt. Lyell Co., and used in the manufacture of artificial manures. Although it can hardly be considered a mineral product, mention may be made here of the large accumulations of guano on the Abrolhos Islands, off the coast of Western Australia, in the neighbourhood of Geraldton. The deposits vary in thickness from four to twenty-seven inches. During the years 1876-80 over 36,000 tons were raised; no figures are available shewing the production of recent years.

§ 14. Gems and Gemstones.

1. **Diamonds.**—Diamonds were first noted in New South Wales by E. J. Hargraves in 1851, and in October of the same year by Geological Surveyor Stutchbury. The Cudgegong field was discovered in 1867, and shortly afterwards the Bingara diamondiferous deposits were located. Stones of small size are also found at Cope's Creek and other places in the Inverell district. The largest diamond won in New South Wales was obtained in 1905 at Werong, near Oberon, and weighed $28\frac{5}{16}$ carats. It is difficult to secure accurate returns in connection with the production of precious stones, but the yield of diamonds in 1911 was estimated at 5771 carats, valued at £4064, while the total production to the end of 1911 is given as 176,731 carats, valued at £118,407. The yield in 1911 was contributed by miners working in the vicinity of Copeton, in the Tingha division. Small quantities of diamonds are found in Victoria in the gravels of streams running through granite country in the Beechworth district; at Kougbool in the Western District; and near Benalla. The stones are generally small, and the production up to date has been trifling. A few small diamonds have been found in the Pilbara district in Western Australia. In South Australia diamonds have been found on the ~~Belund~~ ^{Belund} ~~Belund~~ ^{Belund} the most notable gem being Glover's diamond, which was sold for £70.

2. **Sapphires.**—These gems were discovered in New South Wales near Burradong. They have also been found in small quantities near Inverell, and near a few other localities in the State. There is no record of production. Specimens of sapphire have been found in Victoria, but the stones of commercial size are generally of little value owing to flaws.

In Queensland sapphires are found in the gravel of creek beds, between Withersfield and Anakie on the Rockhampton-Winton railway line. The gems show excellent fire and lustre, but the colour is darker blue than the Oriental sapphire. Hyacinths are occasionally found in association with the gems. The production of sapphires in Queensland in 1911 was valued at £24,393, and up to the end of 1911 the total was £186,186. The production in 1911 included industrial corundum to the value of £5629. Sapphires are plentifully found in the tin drifts of the Ringarooma and Portland districts in Tasmania, but the stones are, as a rule, small and not worth saving.

3. Precious Opal.—This stone was first discovered in New South Wales at Rocky Bridge Creek on the Abercrombie River, in the year 1877, and later a most important discovery was made at White Cliffs in the Wilcannia district, which, until recently, contributed the bulk of the production. In 1911, however, out of a total production valued at £57,300, the yield from the Lightning Ridge field near Walgett, amounted to £39,100, while the output from the White Cliffs field was returned at £17,700. The colour and brilliance of the stones generally were quite up to the standard, and one stone, weighing 5 ozs and valued at £300, was recovered in 1911. Occasionally, black opals of very fine quality are found, one specimen from the Wallangulla field, weighing $6\frac{1}{2}$ carats, being sold in 1910 for £102.

The total value of opal won in New South Wales since the year 1890 is estimated at £1,295,100.

Small quantities of precious opal are also found in the Beechworth district in Victoria. In Queensland, the first recorded discovery of the gem dates from about 1875. The opaliferous district stretches over a considerable area of the western interior of the State, from Kynuna and Opalton as far down as Cunnamulla. The yield in 1911 was estimated at £3000, and up to the end of that year at £169,195. These figures are, however, merely approximations, as large quantities of opal are disposed of privately to buyers on the fields, no record of which is obtained. At present, the industry is not in a very satisfactory position, as the shallower grounds of the older centres have been worked out, and there appears to be little disposition to explore the deeper grounds.

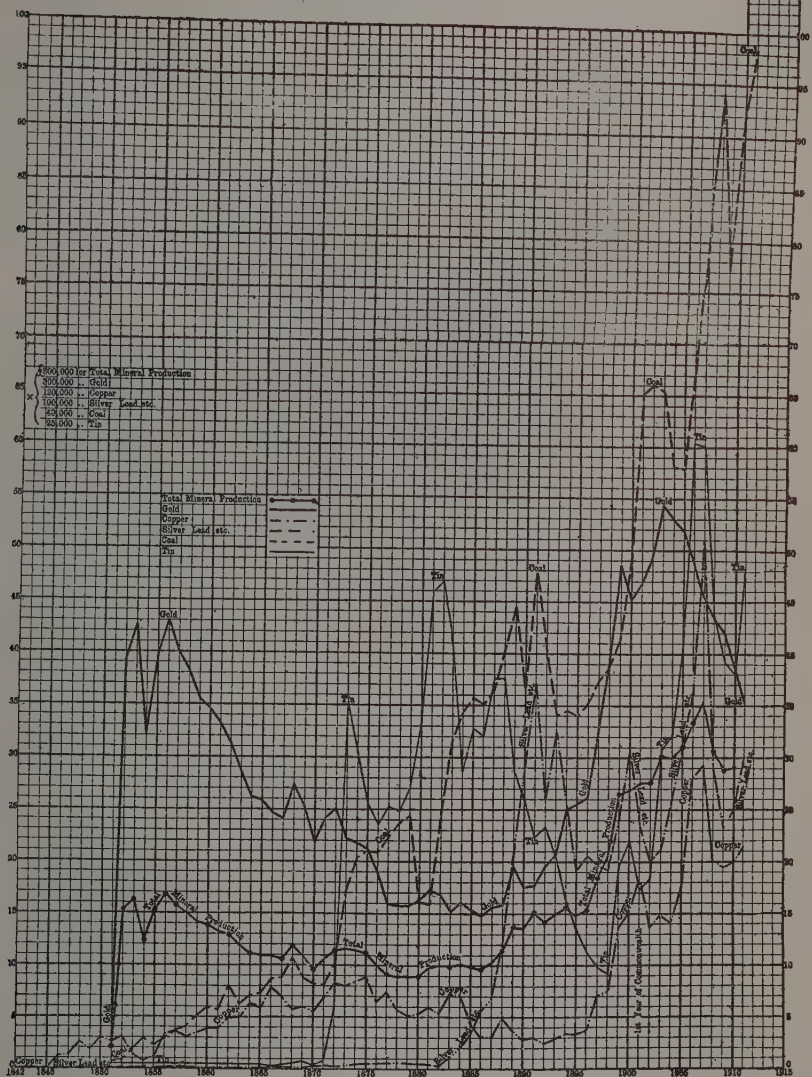
4. Other Gems.—Emeralds were found in New South Wales in the year 1890, near the township of Emmaville, the largest specimen found in the district weighing twenty-three carats in the rough. Altogether 2225 carats were sent to London during that year, some of the gems bringing £4 a carat, but the production has since dwindled. The mine at the Glen in the Emmaville division was reopened and worked for a short period during 1908, when about 1000 carats of emeralds, valued at about £1650, were obtained. The largest stone in the rough weighed 60 carats. Amongst other gems found in New South Wales at various times may be mentioned *turquoises*, discovered in 1894, near Bodalla; *topazes*, fine specimens of which have been obtained in the New England district, and *zircons* and *garnets*. Topazes are common in the tin drifts of Tasmania, and some fine specimens have been found. Turquoises are also found in thin veins in Victoria, but the deposit is not rich enough to pay for expenses of working. Fine *agates* are found in many places in Victoria, but have not been made use of to any extent. Garnets are found in Western Australia, and beautiful specimens of *crocidolite* have been obtained at Yarra Creek in the Murchison district. *Rubies* have been found at various places in New South Wales and Queensland. *Tourmaline* has been found on Kangaroo Island, in South Australia, and *beryls* near Williamstown, Victoria. Very large but impure beryl crystals have been found at Ben Lomond in Tasmania.

(C). GENERAL.

§ 15. Numbers Engaged, Wages Paid, and Accidents in Mining.

Engagement in Mining.—The number of persons engaged in the mining industry in each State and in the Commonwealth is an index of the significance of the mineral wealth. During the year 1911 the number so employed was as follows:—

GRAPHS SHEWING VALUES OF PRINCIPAL MINERALS PRODUCED IN THE COMMONWEALTH, 1842 to 1911.



(See pages—for total mineral production, 478; gold, 480; silver, 487; copper, 490; tin, 493; coal, 503.)

EXPLANATION OF GRAPHS—The values shewn in the above diagrams are those of the total Commonwealth production of the most important minerals in successive years from 1842 to 1911.

The base of each small square represents an interval of one year, and the vertical height represents, in the case of gold £300,000; copper, £120,000; silver, lead, etc., £100,000; coal, £40,000; tin, £25,000; and total mineral production, £800,000.

The names of the various minerals are written on the graphs which respectively represent them, and the distinctive types of line used are exhibited in detail in the central portion of the diagram.

NUMBER OF PERSONS ENGAGED IN MINING, 1911.

State.	Number of Persons Engaged in Mining for						Total.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Coal and Shale.	Other.	
New South Wales ...	4,650	8,495	2,151	2,225	17,657	1,839	37,017
Victoria ...	14,015	...	57	34	1,754	126	15,986
Queensland ...	5,227	483	2,458	1,860	1,981	1,242	13,201
South Australia ...	920	30	4,030	...	...	1,020	6,000
Western Australia ...	15,428	43	317	321	463	24	16,596
Tasmania ...	570	1,125	1,565	1,755	189	43	5,247
Northern Territory ...	358	7	29	280	...	41	715
Commonwealth ...	41,168	10,133	10,607	6,475	22,044	4,335	94,762

The following table shows the number of persons engaged in mining in the Commonwealth during each of the years 1891, 1901, and 1911, together with the proportion of the total population so engaged:—

PROPORTION OF PERSONS ENGAGED IN MINING, 1891, 1901, 1911.

State.	1891.		1901.		1911.	
	Miners Employed.	No. per 100,000 of Popu- lation.	Miners Employed.	No. per 100,000 of Popu- lation.	Miners Employed.	No. per 100,000 of Popu- lation.
New South Wales ...	30,604	2,700	36,615	2,685	37,017	2,177
Victoria ...	24,649	2,151	28,670	2,381	15,986	1,193
Queensland ...	11,627	2,934	13,352	2,664	13,201	2,122
South Australia ...	2,683	834	7,007	1,931	6,000	1,435
Western Australia ...	1,269	2,496	20,895	11,087	16,596	5,644
Tasmania ...	3,988	2,695	6,923	4,017	5,247	2,713
Northern Territory ...	...	...	...	...	715	...
Commonwealth ...	74,820	2,341	113,462	2,992	94,762	2,074

2. Wages Paid in Mining.—In the next table will be found a statement of the average wages earned by employees in the chief branches of the mining industry in Australia. The value of the figures is rather prejudiced by the wide diversity of conditions, not only in the several States but in different districts of the same State.

The figures quoted for New South Wales in gold mining refer to the Hillgrove district. For copper the figures refer to the Cobar district, and represent rates as awarded by the Arbitration Court. The maximum is paid when copper is £115 per ton or over, and the minimum when the metal is £70 per ton or under, a graduated rate prevailing between the extremes. The rates for silver miners are those ruling at Broken Hill. As regards Queensland the rates for hewing in coal mines are for miners not doing their own wheeling. Where own wheeling is done the rate varies from 2s. 3d. to 5s. 6d. For Western Australia, the rates shewn in gold mining refer to the chief centres only, and are exclusive of Nullagine, where much higher rates prevail owing to increased cost of living consequent on the remoteness of the district. Generally speaking, the classification of the labour in the various States does not permit of very satisfactory comparisons.

WAGES PAID IN THE MINING INDUSTRY IN THE COMMONWEALTH, 1911-12.

Class of Mine.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
	per day.	per day.	per day.	per day.	per day.	per day.
GOLD—						
Labourers ...	8/- to 9/-	8/-	6/8 to 10/10	8/-	10/- to 13/4	7/-
Bracemen ...	8/- to 10/-	...	11/8 to 13/-	8/-	...	7/6
Platmen ...	8/6 to 10/-	8/-	7/9 to 13/-	8/-	10/10 to 14/2	7/6
Miners ...	9/6 to 10/6	8/8	...	9/6	11/6 to 14/2	7/6
Wet ...	11/6	9/1	...	11/-	...	8/4
Shaft-sinking ...	11/-	8/8 to 9/4	8/2 to 13/-	11/-	12/8 to 15/-	8/4
Wet ...	...	9/ to 10/-	...	11/-	13/6 to 16/8	9/2
Blacksmiths ...	10/6 to 11/6	9/-	9/9 to 13/4	10/-	12/- to 16/8	8/-
Carpenters ...	10/6 to 12/-	8/4 to 8/8	9/1 to 16/-	10/6	15/- to 16/8	8/- to 8/4
Engine-drivers—						
Stationary ...	9/- to 11/6	8/4	9/9 to 15/4	10/-	13/4 to 15/-	8/-
Winding ...	11/- to 12/6	10/-	9/10 to 14/5	10/-	14/- to 16/8	8/4
Battery feeders ...	9/3	5/4 to 6/8	6/6 to 11/8	8/-	10/- to 11/10	7/6 to 8/-
Shift bosses ...	10/- to 11/3	9/4	10/7 to 17/2	13/4	16/8 to 20/-	wk. salary
Machine miners ...	9/6 to 11/6	8/8	8/4 to 16/3	11/-	12/4 to 17/2	8/4
Timbermen ...	10/6 to 11/6	8/8	9/2 to 14/5	10/-	12/- to 16/8	8/4
SILVER-LEAD—						
Labourers ...	9/6	...	...	8/-	...	8/- to 9/-
Bracemen ...	10/6	...	...	8/-	...	8/- to 9/6
Miners ...	11/- to 13/-	...	The above figures refer to averages per shift in all metalliferous mines in Q'nsland)	9/6	...	9/- to 10/-
Blacksmiths ...	10/6 to 13/6	...	...	10/-	...	9/- to 12/2
Carpenters ...	12/6 to 13/6	...	...	10/6	...	9/8 to 13/4
Engine-drivers—					Same as gold.	
Winding ...	12/-	...	...	10/-	...	9/4 to 11/-
Shift bosses ...	14/-	...	...	13/4	...	10/- to 13/4
Truckers ...	9/6	...	...	8/-	...	8/- to 9/-
Timbermen ...	11/- to 12/-	...	...	10/-	...	8/4 to 13/4
COPPER—						
Labourers ...	8/- to 9/-	...	...	8/-	...	7/- to 8/6
Miners ...	9/6 to 11/-	...	...	9/6	...	9/6 to 10/6
Blacksmiths ...	10/6	...	...	10/-	...	10/6 to 13/4
Carpenters ...	10/6 to 11/6	...	...	10/6	...	9/6 to 12/6
Engine-drivers ...	11/- to 11/6	...	...	10/-	...	...
Winding ...	12/- to 13/6	...	(see above)	8/-	Do.	11/-
Bracemen ...	9/2 to 10/-	...	...	10/-	...	9/6
Drill sharpeners ...	12/-	...	...	10/-	...	9/6 to 10/6
Timbermen ...	10/6 to 11/6	...	...	10/-	...	10/- to 11/6
Machine miners ...	9/6 to 11/-	...	...	11/-	...	9/6 to 10/6
Miners in wet ground	...	...	...	11/-	...	15/-
TIN—						
Labourers ...	8/-	8/-	...	...	...	7/6 to 8/6
Miners ...	9/6 to 9/10	...	...	...	...	7/6 to 9/-
Blacksmiths ...	10/6	10/-	...	...	...	9/- to 13/4
Carpenters ...	10/6	10/-	...	...	...	9/- to 12/-
Engine-drivers—						
Stationary ...	9/- to 11/-	...	...	...	...	9/- to 10/-
Shift bosses ...	10/-	10/-	(see above)	Not mined.	Do.	8/- to 10/6
Nozzlemen ...	9/6	9/-	...	...	...	8/- to 9/6
Racemen ...	8/8	9/-	...	...	...	7/- to 11/-
Face bosses ...	...	...	...	...	...	9/- to 15/-
Boxmen ...	9/-	9/-	...	...	...	...
Sluicemen ...	8/8	9/-	...	...	...	8/6 to 10/-
COAL—						
Deputies ...	11/- to 12/4	10/- to 12/-	10/- to 10/6	...	14/9	8/- to 8/6
Shot firers ...	10/- to 12/3	...	...	...	13/11	...
Shiftmen ...	8/6 to 12/4	10/ to 10/2	10/- to 10/8	...	13/11	7/- to 8/-
Wheeler ...	8/- to 9/1	8/4 to 9/2	4/6 to 7/-	...	11/11 to 12/9	3/- to 7/-
Overmen ...	£3 to £5/10 wk	10/- to 15/-	10/6 to 11/6	...	£5 per week.	10/- to 11/8
Miners ...	10/- to 15/-	10/-	pd. at pr. ton	...	13/11	8/- to 10/-
Machinemmen ...	11/- to 12/5	12/6	10/-	...	13/5 to 15/1	...
Enginemmen—						
Winding ...	11/- to 12/6	11/-	11/- to 12/-	Not mined.	...	...
Hauling ...	10/- to 11/3	10/-	9/- to 10/-	...	13/1	8/4 to 10/-
Other ...	8/9 to 11/3	7/6 to 9/-	9/- to 11/-	...	...	6/- to 8/-
Labourers ...	7/10 to 8/2	7/6 to 8/4	7/- to 8/-	...	10/1	6/- to 7/6
Blacksmiths ...	9/5 to 12/2	10/- to 11/-	9/- to 13/-	...	12/11	7/- to 9/6
Carpenters ...	9/5 to 11/6	10/-	8/- to 11/-	...	12/9	7/- to 9/-
Safety lampmen ...	4/1 to 10/9	...	...	...	...	...
Platmen or banksmen	8/2 to 10/-	8/2 to 10/-	7/6 to 8/6	...	11/11	6/-

*The higher rates are at the State Mine. †At the State Mine miners received 13/9½ nett on contract.

The figures given in the above table are quoted on the authority of the various Mines Departments, and, while not embracing all employees in the mining industry, will, it is believed, give a fair idea of the remuneration paid in the principal callings.

Under notice issued on the 24th August, 1912, the wages paid by the Wallaroo and Moonta Mining and Smelting Company, in South Australia, are as follows:—Boring machine contract miners, 54/- per week; other contract miners, Wallaroo mines 50/-, Moonta mines 48/-; and other employees at ruling rates. Bonuses are paid as under:—

	—When Copper Averages per Ton—				
	Over £55 to £60.	£60 to £65.	£65 to £80.	£80 to £95.	Over £95.
Boring machine and other contract miners, per week	2/6	3/-	7/6	10/-	12/-
Other employees on standard wages	5 %	10 %	15 %	20 %	25 %

3. **Accidents in Mining, 1911.**—The following table gives particulars of the number of men killed and injured in mining accidents during the year 1911:—

NUMBERS KILLED AND INJURED IN MINING ACCIDENTS, 1911.

Mining for—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	Cwth.
KILLED.								
Coal and shale	15	..	4	...	...	...	...	19
Copper ...	10	...	1	2	...	2	...	15
Gold...	1	19	7	...	36	...	1	64
Silver, lead and zinc	23	...	1	...	...	1	...	25
Tin ...	...	...	1	...	1	1	3	6
Other minerals	1	...	...	...	...	...	...	1
Total ...	50	19	14	2	37	4	4	130
INJURED.								
Coal and shale	92	23	44	...	50	1	...	210
Copper ...	5	...	47	...	...	15	...	67
Gold...	6	65	182	...	474	20	1	748
Iron ...	...	...	...	...	...	...	...	...
Silver, lead and zinc	20	...	11	...	3	15	...	49
Tin ...	1	...	8	...	1	20	...	30
Other minerals	...	...	26	...	...	6	...	32
Total ...	124	88	318	...	528	77	1	1,136

§ 16. State Aid to Mining.

1. **Introduction.**—The terms and conditions under which State aid is granted in mining are alluded to at some length in previous issues (see Year Books IV. and V.), but owing to considerations of space they have been omitted from this issue.

2. **New South Wales.**—The chief aid given in this State is in the direction of assistance to prospectors. Up to the end of 1911 the total sum expended in this manner

amounted to £426,142, of which £9927 was advanced in 1911. During the year the Government subsidy to the Miners' Accident Relief Fund amounted to £13,628.

3. **Victoria.**—Under the Mining Development and Surplus Revenue Acts the sum of £410,876 has been expended during the period 1897 to 1911 as follows:—

	£
Advances to mining companies -	150,935
Advances to prospectors	58,478
Boring for gold and coal	60,643
Construction of roads and tracks	69,831
Erection of testing plants	22,705
Miscellaneous, Cyanide patent, Schools of Mines, etc. ...	48,284
Total ...	410,876

The expenditure in 1911 was £33,606, of which £7958 was advanced to companies as loans under Surplus Revenue Acts; £49 was loaned to miners; £406 was spent on constructing roads, etc.; £1412 on boring for gold, and £60 miscellaneous. From votes £17,518 was spent on boring; £3275 on batteries, while £2928 was advanced to miners. The Government batteries number 24, and of these 15 are managed by local trusts without expense to the Department so far as cost of working is concerned. The repayment of loans by companies amounts to £18,366, by miners £2187, and for cost of boring £5918. The State's contribution to the Coal Miners' Accident Relief Fund amounted in 1911 to £720.

4. **Queensland.**—State assistance to the mining industry in 1911 amounted to about £25,000, of which £4500 was granted as aid in prospecting for further deposits of auriferous stone in existing mines; £12,500 was advanced to assist in deep sinking; £1700 for boring for coal; £2000 to prospectors and small working parties; while £4000 was granted towards the construction and maintenance of roads and tracks in mining districts.

5. **South Australia.**—Aid is given to the mining industry under the terms of the Mining Act of 1893, and previous measures. Up to the end of 1911 the total amount of subsidy paid was £55,238, of which £6112 has been recovered, leaving a debit of £49,126. Portion of this amount is represented by machinery that has fallen into the hands of the Government. Four Government batteries are in operation in this State.

6. **Northern Territory.**—In the Northern Territory, Government assistance in the form of free rations is granted to prospectors and free assays are made. There are three Government boring plants, and two batteries and cyanide plants (both the latter being situated in the Macdonnell Ranges).

7. **Western Australia.**—Under the Mining Development Act of 1902 assistance was granted in 1911 in accordance with the subjoined statement.

Advances in aid of mining work and equipment of mines with machinery, £1654; advances in aid of erection and equipment of crushing plants, including subsidies on stone crushed for the public, £3297; advances in aid of boring, £1142; providing means of transport, £282. In addition, amounts totalling in all £2144 were expended from the Mining Development vote on various matters such as water supply, roads, cartage, and subsidies for development below the 100 feet level in small mines. The sum of £3297 shewn above includes an amount of £943 paid to owners of plants crushing for the public at fixed rates. The Water Supply Department performs a considerable amount of work in the way of boring, construction of reservoirs, well sinking, clearing of tracks, &c.

In 1911 there were thirty-three State batteries in operation. The amount expended on the erection of State batteries up to the end of 1911 was £91,981 from revenue, and £198,752 from loan, giving a total of £290,733. During the year receipts amounted to £53,322, and working expenditure to £60,062.

The total value of gold and tin recovered to the end of 1911 at the State plants was £3,733,939, resulting from the treatment of 834,780 tons of gold ore and 51,553 tons of tin ore.

8. **Tasmania.**—In Tasmania provision is made for State aid to mining under the Deep-Sinking Encouragement Acts of 1899, 1900, and 1901. Under these Acts sums of £5000, £2000, and £1000 respectively were provided for assisting persons and companies to sink shafts or to drive tunnels below a specified depth, the amount advanced in any particular case varying according to the amount expended by the borrower. The total amount advanced to October, 1909, was £6861, granted to five companies in sums ranging from £682 to £1452, leaving an unexpended balance of £1139. None of the companies to whom the advances were made has been successful, and consequently none of the sums advanced, which were to be repaid out of profits, has been refunded. A sum of £1000 was placed on the estimates for 1911-12 for the purpose of assisting prospectors, the money to be expended on the £ for £ principle, and of this £730 was expended.

SECTION XIII.

MANUFACTURING INDUSTRIES.

§ 1. General.

1. **Industrial Progress.**—The statistics of manufactures in the Commonwealth during recent years shew that many industries have now been permanently established on a secure basis, and also indicate a consistent progress both in regard to the extension of existing industries and the establishment of new ones. The scale on which many manufactories are established in Australia naturally appears small in comparison with that of similar establishments in older countries of the world; but it should be remembered that the scope of Australian manufactories is necessarily limited by the comparative sparseness of the population, and that, prior to 1901, development was retarded by the existence of intercolonial tariffs.

(i.) *The Gold Discoveries; 1851.* During the period prior to the gold discoveries (1851) little was done in regard to manufacturing industries in Australia. Such industries as had then been established were chiefly connected with the preparation of food-stuffs, and were to a large extent called into being by the isolated position of the country. It was found that, owing to the comparatively high prices which could be obtained for the products of the pastoral industry, those engaged in such pursuits in Australia could compete successfully in the world's markets. Owing to the sparseness of its population and to the distance of Australia from the world's centres of distribution, there was but little incentive towards any decided progress in agriculture, which was accordingly for many years almost entirely subsidiary to sheep and cattle raising. With the adoption of improved methods of agriculture, however, there were signs of an early extension in the cultivation of wheat, when the discovery of gold in 1851 completely changed the economic aspect in Australia and effected a revolution in all industrial relations. The large towns were practically depleted of their male able-bodied population, and the first effect of the gold rush upon manufacturing industries was disastrous. The supply of labour in many occupations was exhausted, and most branches of industry came to a standstill. There was, however, a rapid change. A decline in the activity of the gold-fields threw many immigrants, whose early lives had been passed in English cities, out of employment. The surplus of labour thus engendered accumulated in Melbourne and a few other large towns, establishing incipient artisan communities. This no doubt intensified the early impulses towards industrial employment. In Victoria, in particular, it was sought to encourage the investment of capital in manufacturing enterprises by the establishment of protective customs duties. Manufacturing industries were revived on a larger scale than formerly, and the population attracted by the discovery of gold remained in Australia and furnished the labour necessary to operate the factories thus established.

(ii.) *Later Progress.* Soon after the discovery of gold, the construction of the first railways (1854) and the re-establishment of regular steamship communication with Europe (1856) helped to encourage the nascent industrial activity. The Colonies of New South Wales and Victoria, which had recently (1855) received the benefits

of responsible government, soon turned their attention to the settlement of an agricultural population on the land. The Acts which were passed had a beneficial effect on the working classes, giving them opportunities for employment not previously open to them, and fostering the manufacturing industries by increasing the measure of primary production. During the following years the various manufacturing industries prospered. The statistics of the States are not sufficiently complete or uniform to enable a statement of the progress of these industries to be given. The following table, however, shewing, so far as returns are available, the number of factories and the number of employees in each State at decennial periods since 1861, will serve to indicate generally the progress which has been made:—

NUMBER OF FACTORIES AND EMPLOYEES IN EACH STATE, 1861 to 1911.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	O'wealth.
NUMBER OF FACTORIES.							
1861	601	531	...	...	...	...	...
1871	1,813	1,740	...	...	...	...	...
1881	2,961	2,488	571†	823†	...	...	...
1891	3,056	3,141	1,328†	996†	175	...	...
1901	3,367	3,249	2,110†	1,335†	662	420*	11,143†
1911	5,089	5,126	1,657	1,314	710	609	14,455
NUMBER OF EMPLOYEES.							
1861	...	4,395	...	...	...	...	...
1871	13,583	19,569	...	5,629†	...	...	...
1881	31,191	43,209	...	10,995†	...	...	...
1891	50,879	53,525	...	14,099†	...	...	...
1901	66,135	66,529	26,172†	19,283†	12,198	7,466*	197,783†
1911	108,664	111,948	37,156	27,907	15,799	10,298	311,772

* For 1902. † Not on same basis as other States. ‡ Not on same basis for some of States as in 1911.

NOTE.—In this and all subsequent tables, except where specially mentioned, "Number of Employees" includes working proprietors.

Since the inauguration of the Commonwealth, the throwing open of the whole of the Australian markets to the industrial products of each State has facilitated the internal distribution of the products of Australian industry.

2. Defects in Industrial Statistics.—A complete statistical account of the growth of the manufacturing industries in Australia unfortunately cannot be given for any lengthy period, owing to the fact that the necessary statistics have not been collected in past years by the several States upon a definite and identical basis. Even in respect of either the definition of a "factory" or (so far as they might be included in related returns) the statistics of persons employed therein, there was formerly no common agreement. The relatively minor place that manufacturing industry held in relation to the total activity of Australia was, perhaps, responsible for the fact that the necessity for uniform method was not earlier recognised.

In 1896 it was agreed, as between Victoria and New South Wales, to adopt a common definition of the term "factory," viz., "any factory, workshop, or mill where four or more persons are employed or power is used." This agreement was adopted for the States generally at the Conference of State Statisticians in 1902, when it was decided, however, that the term "factory" should include also "all establishments, whether making for the trade, wholesale or retail, or for export." It was further agreed that

industries should be arranged, as far as possible, under a uniform classification. As a result of the conference of 1902 a higher degree of uniformity in the collection and presentation of industrial statistics was attained in the several States, so that returns upon which anything like a proper comparative study of the development and progress of various manufacturing industries in the Commonwealth may be based date back only as far as the year 1903, when the resolutions of the conference first came to be put into force. All the States did not, however, fall completely into line, and, as may be seen in the succeeding parts of this section, the comparisons afforded by the returns for the years 1903 to 1906 inclusive, are in some cases subject to various limitations. At the Conference of Statisticians held in Melbourne in 1906 special consideration was given to the methods to be adopted for the collection of statistical information regarding primary and secondary production and industry. A definite classification of industries was adopted, and a set of forms for the collection and compilation of industrial statistics on a definite and uniform basis in each State was agreed upon. The States have not, even yet, fallen entirely into line in collecting and classifying the returns. The particulars for the years 1909, 1910, and 1911 are, however, in more complete co-ordination than those for previous years, and it is now possible to give particulars for the several States in greater detail and on a more uniform basis throughout.

3. Classification of Manufacturing Industries.—Under the classification adopted at the Conference of Statisticians held in 1906, factories were placed under nineteen different categories, according to the nature of the industry carried on therein; many of the categories were also subdivided. Where two or more industries are carried on by one proprietor in one building, each industry is, when possible, treated as a separate establishment. The statement given below shews the classification which has been adopted; it must be understood, however, that this classification does not pretend to be exhaustive, but merely serves as a guide for the collection and presentation of statistics in the several States on a definite and uniform basis:—

CLASSIFICATION OF MANUFACTURING INDUSTRIES.

<p>CLASS I.—TREATING RAW MATERIALS, ETC.</p> <p>Boiling-down, Tallow Refining, etc. Tanneries Woolscouring & Fellmongering Chaff-cutting, etc.</p> <p>CLASS II.—OILS AND FAT, ETC.</p> <p>Oil and Grease Soap and Candles</p> <p>CLASS III.—STONE, CLAY, GLASS, ETC.</p> <p>Bricks and Tiles Glass (including Bottles) Glass (Ornamental) Lime, Plaster, Cement and Asphalt Marble, Slate, etc. Modelling, etc. Pottery and Earthenware</p> <p>CLASS IV.—WORKING IN WOOD.</p> <p>Boxes and Cases Cooperage Joinery Saw Mills Wood-turning, etc.</p> <p>CLASS V.—METAL WORKS, MACHINERY, ETC.</p> <p>Agricultural Implements Brass and Copper</p>	<p>Cutlery Engineering Galvanised Iron-working Ironworks and Foundries Lead Mills Railway Carriages. Railway and Tramway Workshops Smelting Stoves and Ovens Tinsmithing Wireworking Other Metal Works</p> <p>CLASS VI.—FOOD AND DRINK, ETC.</p> <p>Bacon Curing Butter Factories Butterine and Margarine Cheese Factories Condensed Milk Meat and Fish Preserving Biscuits Confectionery Corn-flour, Oatmeal, etc. Flour Mills Jam and Fruit Canning Pickles, Sauces, and Vinegar Sugar Mills Sugar Refining Aerated Waters, Cordials, etc. Breweries Condiments, Coffee, Spices, etc. Distilleries Ice and Refrigerating Malting Tobacco, Cigars, etc.</p>	<p>CLASS VII.—CLOTHING AND TEXTILE FABRICS.</p> <p>Woolen and Tweed Mills Boots and Shoes Slop Clothing Clothing (Tailoring) Dressmaking and Millinery— Makers' material Customers' material Dyeworking and Cleaning Furriers Hats and Caps Waterproof and Oilskin Shirts, Ties, and Scarfs Rope and Cordage Tents and Tarpaulins</p> <p>CLASS VIII.—BOOKS, PAPER, PRINTING, ETC.</p> <p>Electrotyping & Stereotyping Paper-making, Paper Boxes, Bags, etc. Photo-engraving Printing and Binding</p> <p>CLASS IX.—MUSICAL INSTRUMENTS, ETC.</p> <p>Musical Instruments and Sewing Machines</p> <p>CLASS X.—ARMS & EXPLOSIVES</p> <p>Explosives</p>
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CLASSIFICATION OF MANUFACTURING INDUSTRIES.—Continued.

CLASS XI.—VEHICLES, SADDLERY, HARNESS, ETC. Coach and Wagon Building Cycles Perambulators Saddlery, Harness, etc. Spokes, etc.	CLASS XIV.—DRUGS AND CHEMICALS, ETC. Chemicals, Drugs, and Medicines Fertilisers Paints, Varnishes, and By-products	CLASS XVII.—HEAT, LIGHT, AND POWER. Coke Works Electric Apparatus Electric Light and Power Gas Works and Kerosene Lamps and Fittings, etc. Hydraulic Power
CLASS XII.—SHIP AND BOAT BUILDING AND REPAIRING. Docks and Slips Sailmaking Ship and Boat Building and Repairing	CLASS XV.—SURGICAL AND OTHER SCIENTIFIC INSTRUMENTS. Surgical, Optical, and other Scientific Instruments	CLASS XVIII.—LEATHERWARE (N.E.I.) Leather Belting, Fancy Leather, Portmanteaux & Bags
CLASS XIII.—FURNITURE, BEDDING, ETC. Bedding, Flock, & Upholstery Billiard Tables Furniture and Cabinet Making Picture Frames Window Blinds	CLASS XVI.—TIMEPIECES, JEWELLERY, & PLATED WARE. Electro-plating Manufacturing Jewellery, etc.	CLASS XIX.—MINOR WARES. Basket and Wickerware, Matting, etc. Brooms and Brushware Rubber Goods Toys Umbrellas Other Industries

§ 2. Number of Manufactories.

1. **General.**—In stating the number of factories in the States of the Commonwealth it is to be remembered that in the collection of statistics, for years prior to 1907, the same basis has not been adopted in each State. In 1907 in Queensland, for example, 366 factories would have been added under the system previously adopted in that State. This would bring the total up to 1725 on the former basis. The factories excluded, however, are those employing only two hands and no power, and the difference in other respects is not material.

In the following table shewing the total number of manufactories in the Commonwealth during the years 1903 and 1907 to 1911, it should be noted that not only are the results affected by differences of classification prior to 1907, but also that the number of factories from year to year does not unequivocally indicate a change in the position of the industry, since amalgamations may account for part of the reduction of the numbers.

MANUFACTORIES OF THE COMMONWEALTH, 1903, and 1907 to 1911.

Year.	N.S.W.	Victoria.	Queensland.	South Aust.	West. Aust.	Tasmania.	C'wealth.
1903 ...	3,476	4,151	2,001*	906*†	586	431	11,551
1907 ...	4,432	4,530	1,359	1,086	643	505	12,555
1908 ...	4,453	4,608	1,371	1,237	627	557	12,853
1909 ...	4,581	4,755	1,420	1,265	632	576	13,229
1910 ...	4,823	4,873	1,563	1,278	680	635	13,852
1911 ...	5,039	5,126	1,657	1,314	710	609	14,455

* Not on same basis as other States. † 1904 results, those for 1903 not available.

(i.) *Classification of Factories in Commonwealth, 1907 to 1911.* The following table shews the total number of factories in the Commonwealth at the end of each year from 1907 to 1911, classified on the basis indicated in § 1, 3 hereof:—

CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH, 1907 to 1911.

Class of Industry.	1907.	1908.	1909.	1910.	1911.
	No.	No.	No.	No.	No.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	807	812	855	855	857
II. Treating oils and fats, animal, vegetable, etc. ...	92	97	94	100	105
III. Processes in stone, clay, glass, etc. ...	626	627	645	703	719
IV. Working in wood ...	1,215	1,322	1,411	1,474	1,625
V. Metal works, machinery, etc. ...	1,504	1,548	1,588	1,620	1,697
VI. Connected with food and drink, etc. ...	2,250	2,259	2,258	2,286	2,310
VII. Clothing and textile fabrics, etc. ...	2,661	2,681	2,774	2,982	3,093
VIII. Books, paper, printing and engraving ...	964	993	1,011	1,062	1,144
IX. Musical instruments, etc. ...	16	17	18	20	19
X. Arms and explosives ...	8	8	9	13	14
XI. Vehicles and fittings, saddlery and harness, etc. ...	1,071	1,105	1,117	1,195	1,208
XII. Ship and boat building and repairing ...	70	76	84	85	87
XIII. Furniture, bedding, and upholstery ...	470	483	512	560	613
XIV. Drugs, chemicals, and by-products ...	144	153	164	176	189
XV. Surgical and other scientific instruments ...	26	28	30	35	41
XVI. Jewellery, timepieces, and platedware ...	142	153	150	155	169
XVII. Heat, light, and power ...	309	307	314	328	351
XVIII. Leatherware, n.e.l. ...	45	54	55	60	62
XIX. Minor wares, n.e.l. ...	135	136	140	143	152
Total ...	12,555	12,853	13,229	13,852	14,455

For the purpose of the returns in the above table the definition of a factory adopted at the Conference of Statisticians in 1902 (see § 1, 2 hereof) is used, viz., "Any factory, workshop or mill where four or more persons are employed or power is used." The total increase in the number of factories according to this table from 1907 to 1911 was 1900, or an average of 475 a year. The state of the manufacturing industries throughout Australia cannot, however, be gauged from a mere enumeration of the number of factories. Some of the factories concerned were practically in their infancy, employing but few hands, while others were developed on a large scale. Also, as pointed out previously, amalgamations may in some instances account for a reduction in the numbers.

(ii.) *Classification of Factories in each State, 1911.* The following table shows the number of factories in each State of the Commonwealth at the end of the year 1911, classified according to the nature of the industry. (See classification given in § 1, 3 hereof):—

CLASSIFICATION OF FACTORIES IN EACH STATE, 1911.

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Cwlth.
	No.	No.	No.	No.	No.	No.	No.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	272	337	42	131	30	45	857
II. Treating oils and fats, animal, vegetable, etc. ...	48	23	18	11	2	3	105
III. Processes in stone, clay, glass, etc. ...	309	215	37	87	43	28	719
IV. Working in wood ...	662	375	280	101	72	135	1,625
V. Metal works, machinery, etc. ...	509	674	214	191	68	51	1,697
VI. Connected with food and drink, etc. ...	769	651	400	241	140	109	2,310
VII. Clothing and textile fabrics, etc. ...	981	1,407	234	226	144	101	3,093
VIII. Books, paper, printing & engraving ...	436	420	138	66	59	25	1,144
IX. Musical instruments, etc. ...	12	5	...	2	...	...	19
X. Arms and explosives ...	5	9	...	...	...	...	14
XI. Vehicles and fittings, saddlery and harness, etc. ...	384	410	154	152	55	53	1,208
XII. Ship and boat building & repairing ...	41	12	12	10	5	7	87
XIII. Furniture, bedding, and upholstery ...	197	242	72	46	34	22	613
XIV. Drugs, chemicals, and by-products ...	82	81	3	12	11	...	189
XV. Surgical and other scientific instruments ...	12	17	6	2	4	...	41
XVI. Jewellery, timepieces, & platedware ...	48	80	12	15	5	9	169
XVII. Heat, light, and power ...	191	83	23	14	26	14	351
XVIII. Leatherware, n.e.l. ...	20	32	3	4	3	...	62
XIX. Minor wares, n.e.l. ...	61	53	9	13	9	7	152
Total ...	5,039	5,126	1,657	1,314	710	609	14,455

2. **Use of Mechanical Power.**—The principal motive power is steam, but the chief towns possess electric power stations owned either by the Government, or by public bodies or private companies. From these many factories find it convenient to derive their motive power.

The following table shews the number of factories in which machinery was worked by steam, gas, oil, or electricity, and the horse-power of engines or motors used, in each State and in the Commonwealth, during the year 1911 :—

UTILISATION OF MECHANICAL POWER IN FACTORIES IN EACH STATE, 1911.

State.	Number of Establishments.			Actual Horse-power of Engines Used.				
	Using Machinery worked by Steam, Gas, Oil, or Electricity	Others.	Total.	Steam.	Gas.	Oil.	Electricity.	Total.
	No.	No.	No.	H.P.	H.P.	H.P.	H.P.	H.P.
New South Wales	3,550	1,489	5,039	113,939	12,201	1,185	20,671	147,996
Victoria ...	3,377	1,749	5,126	54,282	11,862	1,607	11,764	79,515
Queensland ...	1,186	471	1,657	30,470	4,670	812	3,779	39,731
South Australia ...	926	388	1,314	19,962	4,790	1,651	3,481	29,884
Western Australia ...	510	200	710	24,246	2,082	696	3,612	30,636
Tasmania ...	423	186	609	12,162	284	73	3,269	15,788
Commonwealth	9,972	4,483	14,455	255,061	35,889	6,024	46,576	343,550

A comparison of the above table with that immediately preceding will explain the preponderance of horse-power employed in the New South Wales factories, this State possessing by far the largest number of industries demanding a considerable amount of power; Victoria, on the other hand, has the largest number of establishments, such as those connected with clothing and textile fabrics, wherein much less mechanical power is utilised.

The number of establishments in the Commonwealth using machinery worked by steam, gas, oil, or electricity was 9972, being 68.99 per cent.; 4483 establishments representing 31.01 per cent., used no mechanical power. The total average horse-power in use was 343,550, of which engines in which the motive power was steam formed 74.24 per cent.; gas, 10.45 per cent.; oil, 1.75 per cent.; and electricity, 13.56 per cent. During 1911 there were 708 more establishments using power than in 1910, the increase in horse-power employed being 45,327, or over fifteen per cent.

§ 3. Numbers Employed in Australian Factories.

1. **Total Number Employed.**—Each person employed in and about a factory, in whatever capacity, is now included as a factory employee, consequently every proprietor who works in his business is counted as an employee, and all "outworkers" (see paragraph 6 hereinafter) are also included. The individuals embraced may be classed under the following heads, viz.:—(i.) Working proprietors; (ii.) managers and overseers; (iii.) accountants and clerks; (iv.) enginedrivers and firemen; (v.) skilled and unskilled workers in the factories, mills, or workshops; (vi.) carters and messengers; and (vii.) others.

(i.) *Average Numbers Employed, 1907 to 1911.* The following table shews, for each year from 1907 to 1911 inclusive, (a) the average numbers of persons (including both sexes and all ages) employed in manufacturing industries in each State; (b) the percentage of the numbers employed in each State on the total numbers employed in the Commonwealth; and (c) the numbers employed per ten thousand of the mean population in each State and the Commonwealth :—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN MANUFACTURING INDUSTRIES,
1907 to 1911.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
AVERAGE NUMBER.							
1907	86,467	90,903	27,954	22,701	12,625	8,209	248,859
1908	89,098	93,808	29,200	24,236	12,425	8,727	257,494
1909	91,702	97,355	29,504	25,709	12,826	9,565	266,661
1910	99,746	102,176	33,944*	27,010	14,107	9,980	286,963
1911	108,664	111,948	37,156*	27,907	15,799	10,298	311,772

PERCENTAGE ON COMMONWEALTH TOTAL.

	%	%	%	%	%	%	%
1907	34.75	36.53	11.23	9.12	5.07	3.30	100.00
1908	34.60	36.42	11.34	9.42	4.83	3.39	100.00
1909	34.39	36.51	11.06	9.64	4.81	3.59	100.00
1910	34.76	35.61	11.83*	9.41	4.91	3.48	100.00
1911	34.85	35.91	11.92*	8.95	5.07	3.80	100.00

PER 10,000 OF MEAN POPULATION.

1907	...	560	742	515	611	494	444	603
1908	...	566	756	527	635	482	465	614
1909	...	574	772	518	656	487	503	624
1910	...	611	797	574*	673	521	522	657
1911	...	654	848	605*	679	551	541	694

* Including a number of drapery and tailoring shops making to order of customer; this class of establishment was omitted in Queensland in years previous to 1910.

(ii.) *Rates of Increase, 1907 to 1911.* From the preceding table it may be seen that there has been a general increase in the average number of persons employed in manufacturing industries during the period referred to. The following table shows the percentage of increase during each year on the average number for the preceding year:—

PERCENTAGES OF INCREASE IN AVERAGE NUMBER EMPLOYED, 1907 to 1911.

Years.		N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth
1906-7	...	11.11	6.66	16.67	11.80	— 2.25	— 3.49	8.80.
1907-8	...	3.04	2.75	4.46	6.90	— 1.44	6.31	3.49.
1908-9	...	2.92	3.78	1.04	6.08	3.23	9.60	3.56
1909-10	...	8.77	4.95	15.05*	5.06	9.99	4.34	7.61
1910-11	...	8.94	9.56	9.46*	3.32	11.99	3.19	8.65

Note. (—) signifies a decrease. * See note (*) to preceding table.

2. Classification of Numbers Employed in Factories in the Commonwealth, 1907 to 1911.—The following table gives a classification of the average numbers of persons employed in factories of different descriptions in the Commonwealth during the years. 1907 to 1911 inclusive:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES IN THE
COMMONWEALTH, 1907 to 1911.**

Class of Industry.	1907.	1908.	1909.	1910.	1911.
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	8,956	9,042	9,549	9,655	9,805
II. Treating oils and fats, animal, vegetable, etc.	1,727	1,735	1,812	1,872	2,019
III. Processes in stone, clay, glass, etc.	8,909	9,420	9,605	10,737	12,093
IV. Working in wood	19,457	21,310	22,487	24,520	27,948
V. Metal works, machinery, etc.	47,060	48,505	49,753	54,238	60,538
VI. Connected with food and drink, etc.	40,228	40,652	41,006	42,921	45,623
VII. Clothing and textile fabrics, etc.	68,390	70,075	73,567	78,983	83,845
VIII. Books, paper, printing and engraving	20,734	21,448	21,943	23,064	24,292
IX. Musical instruments, etc.	430	444	433	553	607
X. Arms and explosives	323	339	377	431	508
XI. Vehicles and fittings, saddlery and harness, etc.	10,288	10,784	11,366	12,484	13,294
XII. Ship and boat building and repairing	2,049	2,278	2,320	2,508	2,920
XIII. Furniture, bedding and upholstery	6,819	7,117	7,638	8,434	9,502
XIV. Drugs, chemicals and by-products	2,895	3,086	3,391	3,827	4,165
XV. Surgical and other scientific instruments	170	176	173	190	233
XVI. Jewellery, timepieces, and plated ware	1,700	1,771	1,800	1,896	2,142
XVII. Heat, light, and power	5,372	5,754	5,986	6,770	7,691
XVIII. Leatherware, n.e.i.	788	893	924	1,097	1,226
XIX. Minor wares, n.e.i.	2,564	2,665	2,631	2,783	3,321
Total	248,859	257,494	266,661	286,963	311,772

The total increase in the average number of hands employed from 1907 to 1911 was 62,913, or an annual average of 15,728. The increase was general throughout all the various classes of industry. The greatest development took place in Classes VII. and V., the increases being 15,455 and 13,478 respectively.

3. Classification of Numbers Employed in each State, according to Class of Industry, 1911.—The following table shews a similar classification of employees in manufacturing industries in each State for the year 1911:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES IN EACH
STATE, 1911.**

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	C'wlth.
I. Treating raw material, product of agricul. and pastoral pursuits, etc.	3,890	3,543	690	1,078	263	341	9,805
II. Treating oils and fats, animal, vegetable, etc.	889	601	175	272	46	36	2,019
III. Processes in stone, clay, glass, etc.	5,695	3,753	563	1,269	570	243	12,093
IV. Working in wood	8,181	6,654	4,637	1,880	4,517	2,079	27,948
V. Metal works, machinery, etc.	22,862	18,069	6,343	7,971	3,003	2,290	60,538
VI. Connected with food and drink, etc.	14,050	14,432	10,555	3,425	1,572	1,589	45,623
VII. Clothing and textile fabrics, etc.	26,504	39,700	7,791	5,426	2,692	1,732	83,845
VIII. Books, paper, printing & engraving	9,134	8,706	2,775	1,839	1,142	696	24,292
IX. Musical instruments, etc.	387	197	...	23	...	...	607
X. Arms and explosives	33	475	...	...	...	...	508
XI. Vehicles and fittings, saddlery, and harness, etc.	4,416	4,630	1,471	1,673	655	449	13,294
XII. Ship and boat building & repairing	2,429	133	98	161	37	62	2,920
XIII. Furniture, bedding, and upholstery	3,534	3,122	1,063	1,040	437	286	9,502
XIV. Drugs, chemicals, and by-products	1,460	1,672	67	696	270	...	4,165
XV. Surgical and other scientific instruments	96	84	30	7	16	...	233
XVI. Jewellery, timepieces, & plated ware	753	975	131	173	68	42	2,142
XVII. Heat, light, and power	2,835	2,808	522	764	353	409	7,691
XVIII. Leatherware, n.e.i.	461	634	70	29	32	...	1,226
XIX. Minor wares, n.e.i.	1,055	1,760	155	181	126	44	3,321
Total	108,664	111,948	37,156	27,907	15,799	10,298	311,772

The largest number employed in any particular class in the Commonwealth was in Class VII., in which there were 83,845 employees, or 26.89 per cent. of the whole number. The class affording employment to the smallest number of hands was Class XV., in which there were 233 hands, or 0.07 per cent. of the total number of employees. Classes VI., VII., and VIII. comprise those industries in which female labour is largely employed. (See § 4, 5 hereof.)

4. Classification of Numbers Employed in each State according to Nature of Employment, 1911.—In the following table the average numbers of persons employed in each State during the year 1911 are classified according to the nature of their employment:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH STATE, CLASSIFIED
ACCORDING TO NATURE OF EMPLOYMENT, 1911.**

State.	Average Number of Persons Employed.						Total.
	Working Pro-prietors.	Managers and Overseers.	Account-ants and Clerks.	Engine-drivers and Firemen.	Workers, Skilled & Unskilled in Factory Mill or Workshop	Carters, Messen-gers and Others.	
New South Wales ...	4,344	3,323	3,825	2,673	91,995	2,504	108,664
Victoria ...	5,201	3,058	3,524	1,794	94,293	4,078	111,948
Queensland ...	1,428	1,215	1,414	1,444	29,518	2,137	37,156
South Australia ...	1,335	739	1,005	502	23,485	841	27,907
Western Australia ...	523	530	561	437	12,005	1,743	15,799
Tasmania ...	501	455	353	416	8,243	330	10,298
Commonwealth ...	13,332	9,320	10,682	7,266	259,539	11,633	311,772

5. Classification of Factories according to Number of Hands Employed, 1911.—The number of factories in each State classified according to the number of hands employed, and the total number of hands employed therein, are shewn in the following table:—

**CLASSIFICATION OF FACTORIES ACCORDING TO NUMBER OF HANDS EMPLOYED,
1911.**

No. of Persons Employed in each Factory.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
NUMBER OF FACTORIES.							
Under 4 ...	776	727	169	138	108	115	2,033
4 ...	550	550	152	141	64	76	1,533
5 to 10 ...	1,736	1,868	618	522	237	226	5,207
11 to 20 ...	901	901	320	226	148	93	2,589
21 to 50 ...	641	673	241	179	95	61	1,890
51 to 100 ...	242	221	87	68	35	24	677
Over 100 ...	193	186	70	40	23	14	526
Total ...	5,039	5,126	1,657	1,314	710	609	14,455

CLASSIFICATION OF FACTORIES ACCORDING TO NUMBER OF HANDS—Continued.

No. of Persons Employed in each Factory.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
AVERAGE NUMBER OF HANDS EMPLOYED.							
Under 4 ...	1,829	1,779	410	350	248	269	4,885
4 ...	2,200	2,200	608	564	256	304	6,132
5 to 10 ...	12,153	13,022	4,358	3,660	1,656	1,541	36,390
11 to 20 ...	13,224	13,496	4,753	3,265	2,137	1,300	33,175
21 to 50 ...	19,569	20,896	7,476	5,591	3,141	1,853	58,526
51 to 100 ...	17,218	15,537	6,435	4,836	2,350	1,662	45,038
Over 100 ...	42,471	45,018	13,116	9,641	6,011	3,369	119,626
Total ...	108,664	111,948	37,156	27,907	15,799	10,298	311,772

6. Outworkers.—The term “outworker” or “homeworker” has acquired a special meaning in connection with manufacturing industries, and technically embraces only those to whom work is given out by factory owners to be wrought upon in the employees’ own homes. Individuals working for themselves are not included. The following table gives particulars of the average number of outworkers connected with factories in each State during each year from 1907 to 1911 inclusive :—

NUMBER OF OUTWORKERS* CONNECTED WITH FACTORIES, 1907 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1907 ...	592	1,429	264	66	18	60	2,429
1908 ...	596	1,457	171	74	11	11	2,320
1909 ...	630	1,695	144	65	13	...	2,547
1910 ...	720	1,584	224	68	20	76	2,692
1911 ...	784	1,906	158	88	15	96	3,047

* In all tables relating to number of hands employed in factories outworkers are included.

The Factories Acts in each State contain provisions regulating the employment of outworkers. Generally records of out-work must be kept by factory proprietors, specifying the names and remuneration of workers, and stating the places where the work is done. Further particulars are given in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation*.)

§ 4. Sex Distribution in Factories.

1. Employment of Females in Factories.—In all the States the employment of female labour in factories is now regulated by Act of Parliament. In Victoria the first Act dealing with the subject was passed in the year 1873, and provided that no female should be employed for more than eight hours a day without the permission of the Chief Secretary. The number of working hours for women is now limited to forty-eight per week in all the States overtime being allowed only with the permission of the Departments, and then to a limited extent. The maximum periods of continuous labour, and the intervals of cessation therefrom, are also prescribed by the several Acts. Further reference is made to the restrictions regarding the employment of females in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation*.)

2. **Distribution of Employees according to Sex, 1907 to 1911.**—In New South Wales the ratio of the number of females employed in factories to the number of males during 1886 was about one to seven; in 1891 one to six; in 1903 it became about one to four; and is now rather lower than one to three. In Victoria the ratio of females to males during the year 1886 was about one to five. Five years later (1891) it was somewhat less, but in 1896 had increased to about one woman to three men, and at present is slightly over one to two. In the remaining States the ratios during 1911 were—Queensland and South Australia—a little under one female employed to every four males, Western Australia one to five, and in Tasmania one to six. The proportion for the whole of the Commonwealth was just over one to three. The employment of women is, however, largely confined to a few trades.

The great prosperity in clothing and textile industries is one of the main causes of increase in female employment. Certain trades are specifically known as women's trades, such as clothing and textile trades, preparation of food, book-binding, and lighter work connected with the drug trade, as for example wrapping. In common with commercial establishments, a considerable number of women are also employed as clerks and typists in factories.

(i.) *Average Number of Males and Females Employed, 1907 to 1911.* The following table shews the average number of male and female employees in factories in each State from 1907 to 1911:—

AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN MANUFACTURING INDUSTRIES, 1907 to 1911.

State.	1907.	1908.	1909.	1910.	1911.
MALES.					
New South Wales	65,953	67,616	69,184	75,419	82,123
Victoria	59,691	60,873	62,822	66,309	73,573
Queensland	23,191	24,639	24,877	*27,165	*29,832
South Australia	18,423	19,640	20,758	21,864	22,651
Western Australia	10,671	10,453	10,703	11,654	13,212
Tasmania	6,972	7,334	8,132	8,277	8,737
Commonwealth	184,901	190,555	196,471	210,688	230,128
FEMALES.					
New South Wales	20,514	21,482	22,518	24,327	26,541
Victoria	31,212	32,935	34,533	35,867	38,375
Queensland	4,763	4,561	4,627	*6,779	*7,324
South Australia	4,278	4,596	4,956	5,146	5,256
Western Australia	1,954	1,972	2,123	2,453	2,587
Tasmania	1,237	1,393	1,433	1,703	1,561
Commonwealth	63,958	66,939	70,190	76,275	81,644

* See Note (*) to § 3, 1 (i).

It will be seen that during the years specified there has been for the whole Commonwealth a total increase in the number of male employees of 45,227, or an annual average of 11,307, and in the number of female employees a total increase of 17,686, or an annual average of 4421.

(ii.) *Average Number of Males and Females Employed per 10,000 of Mean Population, 1907 to 1911.* The following table shews the average number of male and female employees per 10,000 of the mean male and female population respectively in each State from 1907 to 1911:—

**AVERAGE NUMBER OF MALE AND FEMALE FACTORY EMPLOYEES PER 10,000 OF
MEAN MALE AND FEMALE POPULATION RESPECTIVELY, 1907 to 1911.**

State.	1907.	1908.	1909.	1910.	1911.
MALES.					
New South Wales ...	811	816	826	888	947
Victoria ...	991	1000	1012	1045	1118
Queensland ...	785	818	801	*843	*892
South Australia ...	980	1015	1040	1071	1084
Western Australia ...	723	707	712	754	805
Tasmania ...	736	765	835	848	900
Commonwealth ...	863	876	887	929	986
FEMALES.					
New South Wales ...	281	288	296	312	334
Victoria ...	501	521	539	554	579
Queensland ...	193	181	178	*252	*262
South Australia ...	233	244	257	261	260
Western Australia ...	181	179	188	210	211
Tasmania ...	137	152	154	182	167
Commonwealth ...	323	332	341	363	379

* See note (*) to § 3. 1 (i).

3. Rate of Increase for each Sex.—The percentages of annual increase during the years 1907 to 1911 in the average number of males and females employed in manufacturing industries in the several States and the Commonwealth are shewn below:—

**PERCENTAGES OF ANNUAL INCREASE IN NUMBERS OF MALE AND FEMALE
EMPLOYEES, 1907 to 1911.**

State.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.
MALES.					
	%	%	%	%	%
New South Wales ...	9.96	2.52	2.32	9.01	8.89
Victoria ...	5.95	1.98	3.20	5.55	10.95
Queensland ...	16.18	6.24	0.97	*9.20	*9.82
South Australia ...	11.99	6.61	5.67	5.35	3.60
Western Australia ...	—3.12	—2.04	2.39	8.89	13.37
Tasmania ...	3.43	5.19	10.88	1.78	5.56
Commonwealth ...	8.15	3.06	3.10	7.24	9.23
FEMALES.					
New South Wales ...	14.97	4.72	4.82	8.04	9.10
Victoria ...	8.04	5.52	4.85	3.86	6.99
Queensland ...	19.08	—4.24	1.45	*46.51	*8.04
South Australia ...	15.56	7.43	7.83	3.83	2.14
Western Australia ...	3.83	0.92	7.66	15.54	5.46
Tasmania ...	3.21	12.61	2.87	18.84	—8.34
Commonwealth ...	11.05	4.66	4.86	8.67	7.04

Note.—The minus (—) sign indicates decrease. * See note (*) to § 3. 1 (i).

4. **Ratio of Female Employment in Factories.**—The extent to which females are employed in the factories of the Commonwealth may perhaps be best shewn by giving the number of females to every 100 male employees for each State for each year from 1907 to 1911 inclusive:—

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth
1907	31.10	52.29	20.53	23.22	18.19	17.74	34.58
1908	31.77	54.10	18.51	23.36	18.86	18.99	35.12
1909	32.55	54.97	18.60	23.88	19.74	17.62	35.73
1910	32.26	54.09	*24.95	23.54	21.05	20.58	36.20
1911	32.32	52.16	*24.55	23.20	19.58	17.87	35.48

This table shows that the proportion of the sexes has not materially changed during the past five years, the ratio of females to every hundred males employed having only increased from 34.58 in 1907 to 35.48 in 1911. The tables given in the succeeding paragraph show that this slight increase has been due not so much to the incursion of female labour into what may be termed men's trades, as to the activity in those trades in which women are ordinarily engaged, more especially in dressmaking, millinery, etc.

AVERAGE NUMBER OF FEMALES EMPLOYED IN PARTICULAR INDUSTRIES, AND PERCENTAGES ON AVERAGE TOTAL EMPLOYED, 1911.

[illegible]

It will be seen that by far the greater part of the total number of females employed in factories work in one or other of the three classes of industry indicated, Class VII. being the most important. The classification of the employment of females in the several industries in that class, and the ratio they bore to males so employed, is shewn in the following table:—

FEMALE EMPLOYMENT IN EACH INDUSTRY IN CLASS VII., DURING 1911.

Industry.	New South Wales.			Victoria.			Other States.		
	Males.	Femls.	Femls. Per 100 Males.	Males.	Femls.	Femls. Per 100 Males.	Males.	Femls.	Femls. Per 100 Males.
Woollen & tweed mills	382	569	149	756	919	122	244	330	135
Boots and shoes ...	2,818	1,593	57	4,489	2,562	58	1,574	786	50
Slop clothing	3,248	8,507	262	2,402	8,208	342	2,139	6,045	283
Clothing (tailoring)									
Dressmaking & millin'y	89	5,053	5,678	243	9,652	3,972	51	3,715	7,284
Dyeworks and cleaning	36	32	89	65	82	126	28	18	64
Furriers ...	24	24	100	41	89	217	3	11	367
Hats and caps	537	1,029	192	756	1,261	167	95	178	187
Waterproof and oilskin	26	98	377	52	162	312	...	...	...
Shirts, ties, and scarfs	139	1,655	1,191	353	6,543	1,854	117	1,906	1,629
Rope and cordage ...	230	3	1	512	326	64	133	61	46
Tents and tarpaulins...	167	245	147	97	54	56	133	74	56
Other ...	...	...	...	9	117	1,300	...	...	...
Total Class VII....	7,696	18,808	244	9,725	29,975	308	4,517	13,124	291

§ 5. Child Labour in Factories.

1. **Conditions of Child Labour.**—The employment of young persons in factories in each State of the Commonwealth is regulated by Acts of Parliament in a similar manner to the employment of female labour. Excepting under special circumstances, children under a certain age may not be employed in factories. The minimum age in all the States is 14, with the exception of South Australia, where it is 13 years, and Victoria, where the minimum for females is 15 years. Other restrictions on the employment of young persons in factories are more particularly referred to in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation*.) The general object of the restrictions imposed is to assure that a proper period shall be devoted to primary education, and that the early years of toil shall not exhaust the worker before the attainment of full growth.

2. **Average Number of Children Employed in Factories, 1907 to 1911.**—In the statistical compilations of the various States the term "child" may be taken to denote any person under sixteen years of age, excepting in New South Wales, where it denoted, for years prior to 1907, any person under fifteen. The following table shews the average number of children of each sex employed in manufacturing industries in each State during the years 1907 to 1911. During the period under review, there was an increase in the average number employed in every State, with the exception of Victoria and South Australia, there being a decrease of 1780 in the former and 53 in the latter State.

AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES, 1907 to 1911.

State.	1907.	1908.	1909.	1910.	1911.
MALES.					
New South Wales ...	2,406	2,475	2,433	2,452	2,474
Victoria ...	3,253	3,049	2,817	2,753	2,623
Queensland ...	1,119	1,084	1,001	*1,031	*1,176
South Australia ...	1,127	1,179	1,094	1,082	999
Western Australia ...	216	289	289	340	368
Tasmania ...	214	239	258	282	280
Commonwealth ...	8,335	8,265	7,892	7,940	7,920
FEMALES.					
New South Wales ...	1,880	1,859	1,973	2,025	2,267
Victoria ...	3,095	3,065	2,496	2,174	1,937
Queensland ...	576	583	556	*733	*818
South Australia ...	480	568	577	702	555
Western Australia ...	159	251	242	266	293
Tasmania ...	97	135	128	96	131
Commonwealth ...	6,287	6,461	5,972	5,996	6,001
TOTAL.					
New South Wales ...	4,286	4,334	4,406	4,477	4,741
Victoria ...	6,348	6,114	5,313	4,927	4,560
Queensland ...	1,695	1,617	1,557	*1,764	*1,994
South Australia ...	1,607	1,747	1,671	1,784	1,554
Western Australia ...	375	540	531	606	661
Tasmania ...	311	374	386	378	411
Commonwealth ...	14,622	14,726	13,864	13,936	13,921

* See Note (*) to § 3. 1 (i).

3. **Percentage of Children to Total Persons Employed.**—The foregoing table shews a general increase in several of the States in the number of children employed in factories during the past quinquennial period. These increases, however, when examined in conjunction with the total number of persons employed, shew that in every state a fairly regular decrease in the percentage of child labour is in evidence. The 1908 and subsequent returns for Western Australia shew a considerable increase over the 1907 figures; this increase occurred mainly in clothing and other light industries in 1908, and has since shewn a slight diminution.

PERCENTAGE OF CHILDREN IN FACTORIES TO TOTAL NUMBER OF EMPLOYEES, 1907 to 1911.

State.	1907.	1908.	1909.	1910.	1911.
	%	%	%	%	%
New South Wales ...	4.96	4.86	4.80	4.49	4.36
Victoria ...	6.98	6.52	5.46	4.82	4.07
Queensland ...	6.06	5.54	5.28	5.20	5.37
South Australia ...	7.08	7.21	6.50	6.60	5.57
Western Australia ...	2.97	4.35	4.14	4.30	4.18
Tasmania ...	3.79	4.29	4.04	3.79	3.99
Commonwealth ...	5.88	5.72	5.20	4.86	4.47

4. **Industries Employing Child Labour, 1911.**—The employment of children is largely confined to a limited number of industries, the most important of which are specified in the table below, which shews the average number of children of each sex employed in the several industries indicated in each State during the year 1911:—

NUMBER OF CHILDREN ENGAGED IN VARIOUS INDUSTRIES, 1911.

Class.	Industry.	N.S.W.		Victoria.		Q'land.		S. Aust.		W.A.		Tas.		C'w'lth.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
III.	Bricks, tiles, pottery and earthenware ...	67	3	35	1	16	...	29	...	10	1	7	...	164	5
IV.	Joinery, boxes, cases, etc. ...	99	...	79	...	39	4	45	...	12	...	11	...	285	4
V.	Engineering, ironworks, and foundries ...	218	...	261	2	76	...	70	...	53	...	6	...	684	2
"	Galvanised iron-work- ing and tinsmithing ...	71	2	99	12	64	1	44	4	...	...	3	...	281	19
"	Railway carriages, rail- way & tramway work- shops ...	50	...	64	...	34	...	37	...	21	...	4	...	210	...
VI.	Biscuits, cakes, etc. ...	178	110	67	6	18	9	5	5	8	8	10	1	286	139
"	Confectionery ...	42	67	25	24	23	39	26	15	6	13	...	...	121	158
"	Jams, pickles, sauces, etc. ...	56	16	44	38	22	...	34	32	3	1	38	19	197	106
"	Aerated waters, cor- dials, etc. ...	58	6	28	1	54	2	18	...	12	...	3	...	173	9
"	Tobacco, cigars, etc. ...	61	71	25	16	2	1	4	4	1	3	...	...	93	95
VII.	Boots and shoes ...	126	172	173	174	62	65	30	25	6	12	7	8	404	456
"	Clothing (tailoring and slop) ...	99	604	92	368	69	295	33	183	12	72	8	23	313	1,545
"	Dressmaking and mil- linery ...	1	463	8	509	3	125	...	98	1	98	...	64	13	1,357
"	Hats and caps ...	28	98	53	49	1	5	9	2	...	...	...	...	91	154
"	Shirts, ties, scarfs, etc. ...	2	156	8	345	9	132	1	69	2	39	...	...	22	741
"	Woollen, tweed, and cotton mills ...	18	50	91	77	11	23	4	10	...	...	5	2	129	162
VIII.	Electrotyping, printing and binding ...	334	154	439	100	237	77	73	17	65	29	51	11	1,199	388
"	Paper making, paper boxes, etc. ...	37	117	21	31	2	11	20	60	1	6	...	...	81	225
XI.	Coach & wagon build- ing, etc. ...	75	...	137	...	44	...	47	...	18	...	12	...	328	...
XIII.	Billiard tables, cabinet making and furniture ...	65	...	69	2	54	2	45	...	16	...	15	...	264	4

5. **Apprenticeship.**—It is obvious that the age of apprenticeship in each State must be limited by the conditions governing the employment of child labour in factories. The early Apprentices' Acts in some of the States are apparently in conflict on this point with the Factories Acts. The statutes limiting the age at which children may begin to work may be regarded as applicable by way of preventing too early apprenticeship, so also may those directing that education be continued up to a certain age or standard.

Indentures must be entered into specifying the conditions of the employment. Apprenticeships may not exceed seven years in duration, and become inoperative at twenty-one years of age, or in the case of women, on marriage.

The Arbitration Courts and Wages Boards have power to limit the number of apprentices which may be taken into a factory. No general statistics of the number of apprentices in Australia have been collected up to the present time. Other enactments relating to child labour are referred to in Section XXVII. of this book, *Industrial Unionism and Industrial Legislation*.

§ 6. Amount of Wages Paid and Value of Production.

1. **Introduction.**—The importance of the manufacturing industries of the Common- wealth is indicated by the fact that the total value of the output for 1911 was £133,186,560, of which amount the sum of £79,041,576 represents the value of the raw materials used. The difference between these two amounts, viz., £54,059,984, represents the amount by which the value of the raw materials was enhanced in the process of manufacture. The total amount of salaries and wages paid in factories during 1911 was £27,531,876.

2. **Amount of Salaries and Wages Paid, 1911.**—The total amount of salaries and wages paid during the year 1911 in various classes of factories in the Commonwealth (excluding all sums drawn by working proprietors) is shewn in the following table.

It has been found impracticable to shew satisfactorily in this book the rates of wages paid to employees in various classes of manufacturing industries in Australia, owing to the facts—firstly, that the rates in many industries vary very considerably in different parts of the country; and secondly, that the necessary particulars are not collected by the several States on a uniform basis; while for some of the States the information given is meagre and unsatisfactory.

AMOUNT OF SALARIES AND WAGES PAID IN FACTORIES IN COMMONWEALTH, 1911.*

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w lth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	326,218	288,285	67,999	89,870	19,258	16,102	807,732
II. Treating oils and fats, animal, vegetable, etc. ...	67,228	59,119	18,856	22,926	3,964	2,793	174,886
III. Processes in stone, clay, glass, etc. ...	601,906	367,770	52,178	122,810	62,799	18,090	1,225,493
IV. Working in wood ...	732,465	638,875	398,345	194,679	708,628	178,343	2,851,335
V. Metal works, machinery, etc. ...	2,728,286	1,899,277	610,288	969,201	384,292	237,424	6,828,768
VI. Connected with food and drink, etc. ...	1,301,676	1,273,381	949,176	321,550	199,861	108,668	4,154,312
VII. Clothing and textile fabrics, etc. ...	1,633,509	2,100,633	407,337	311,764	192,446	91,657	4,737,346
VIII. Books, paper, printing and engraving ...	868,868	812,196	287,555	164,619	169,876	75,732	2,378,846
IX. Musical instruments, etc. ...	43,755	20,482	...	1,637	...	...	65,874
X. Arms and explosives ...	1,971	36,210	...	...	...	...	38,181
XI. Vehicles and fittings, saddlery and harness, etc. ...	391,955	349,675	118,812	146,145	75,343	31,815	1,113,745
XII. Ship and boat building and repairing ...	305,932	14,248	11,526	20,706	4,872	4,476	361,760
XIII. Furniture, bedding and upholstery ...	354,368	274,679	89,608	94,801	48,450	17,845	879,751
XIV. Drugs, chemicals, and by-products ...	124,844	146,913	4,507	60,373	31,918	...	369,055
XV. Surgical and other scientific instruments ...	8,202	6,957	2,484	875	1,179	...	19,697
XVI. Jewellery, timepieces, and platedware ...	75,042	91,587	11,590	18,918	8,523	3,854	209,519
XVII. Heat, light, and power ...	374,046	345,086	69,830	88,930	59,807	38,550	976,249
XVIII. Leatherware, n.e.i. ...	36,789	39,972	5,001	2,407	2,545	...	86,714
XIX. Minor wares, n.e.i. ...	74,101	145,674	8,743	12,675	9,117	2,303	252,613
Total ...	10,051,161	8,911,019	3,113,835	2,645,386	1,982,883	827,592	27,531,876

* Excluding all amounts drawn by working proprietors.

The maximum amount of salaries and wages paid in any particular class was in Class V., the amount being £6,828,768, or 24.78 per cent. on the total amount; the minimum amount was in Class XV., £19,697, or 0.07 per cent. on the total amount. The State in which the largest amount was paid was New South Wales. The following statement shews the total amount of salaries and wages paid, and the average amount paid per employee in each State, during each of the years 1907 to 1911; the figures are exclusive of the amounts drawn from the business by working proprietors:—

AMOUNT OF SALARIES AND WAGES PAID AND AVERAGE AMOUNT PER ANNUM PAID PER EMPLOYEE, 1907 to 1911.

Year.	Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w lth.
		£	£	£	£	£	£	£
1907	Total amount paid ...	6,650,715	5,982,677	1,923,639	1,731,394	1,380,708	651,844	18,323,977
	Average per employee ...	50.63	69.32	72.09	60.00	114.11	54.35	77.32
1908	Total amount paid ...	7,218,556	6,380,296	2,192,015	1,924,974	1,474,934	693,592	19,884,367
	Average per employee ...	84.72	71.59	78.28	83.55	123.56	64.43	80.99
1909	Total amount paid ...	7,665,125	6,807,851	2,324,035	2,028,691	1,506,360	779,624	21,111,656
	Average per employee ...	87.27	73.37	82.09	69.08	122.08	86.44	82.97
1910	Total amount paid ...	8,691,386	7,600,932	2,830,704	2,323,338	1,683,657	740,463	23,870,540
	Average per employee ...	90.33	78.18	86.79	90.44	123.93	78.81	87.06
1911	Total amount paid ...	10,051,161	8,911,019	3,113,835	2,645,386	1,982,883	827,592	27,531,876
	Average per employee ...	96.35	83.48	87.15	99.56	129.80	84.47	92.25

In comparing the figures in the above table regard should be paid to the nature of certain industries which are carried on to a greater extent in some States than in others (see § 2 hereof). In Victoria, for instance, where the average is lowest, there are a large number of factories and hands employed in Class VII., and in that class wages are low, a great many women and children being employed. The position occupied by Western Australia is no doubt partly due to the higher cost of living in that State.

It will be noted that—except in Tasmania—there has been a persistent increase in the average wage paid per employee in each of the States during the period under review, despite the tendency of the number of females employed in certain industries to increase at a higher ratio than males. Taking the Commonwealth as a whole, during the period 1907-11 there has been an increase of 50.25 per cent. on the total amount of wages paid and 19.31 per cent. on the average paid per employee.

The following tables shew the approximate amount paid in salaries and wages to males and females in each class of industry in certain States during 1911, and total amounts paid to each sex in New South Wales and Victorian factories during 1909, 1910 and 1911, and in South Australia and Tasmania during 1911. Similar information for Queensland and Western Australia is not available:—

AMOUNT OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS EMPLOYED IN EACH CLASS OF INDUSTRY IN CERTAIN OF THE STATES OF THE COMMONWEALTH, DURING 1911.*

Class of Industry.	N. South Wales.		Victoria.		Sth. Australia.		Tasmania.	
	Males.	Fe- males.	Males.	Fe- males.	Males.	Fe- males.	Males.	Fem.
	£	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	322,857	3,361	237,007	1,278	89,727	143	16,070	32
II. Treating oils and fats, animal, vegetable, etc.	59,750	7,478	57,850	1,269	22,490	436	2,585	208
III. Processes in stone, clay, glass, etc.	599,344	2,562	365,882	1,888	122,556	254	18,080	...
IV. Working in wood	729,344	3,121	636,992	1,883	194,258	421	177,941	402
V. Metal works, machinery, etc.	2,720,892	7,394	1,890,277	9,000	966,861	2,340	236,956	468
VI. Connected with food and drink, etc.	1,164,474	137,202	1,109,611	163,770	308,192	13,358	103,017	5,651
VII. Clothing and textile fabrics, etc.	822,186	811,323	909,853	1,190,782	138,165	173,599	49,498	42,159
VIII. Books, paper, printing and engraving	775,975	92,893	723,323	88,873	147,244	17,375	72,777	2,935
IX. Musical instruments, etc.	42,343	1,412	20,001	481	1,637	...	...	...
X. Arms and explosives	1,823	148	20,695	15,515	...	...	...	...
XI. Vehicles and fittings, saddlery and harness, etc.	387,413	4,542	345,815	4,360	145,019	1,126	31,111	704
XII. Ship and boat building and repairing	305,856	76	14,248	...	20,706	...	4,476	...
XIII. Furniture, bedding and upholstery	398,496	15,872	262,501	12,178	93,286	1,515	17,433	412
XIV. Drugs, chemicals and by-products	103,811	21,033	133,606	13,307	58,542	2,331	...	...
XV. Surgical and other scientific instruments	7,194	1,008	6,566	391	875	...	...	...
XVI. Jewellery, timepieces and platedware	70,520	4,522	88,245	3,342	18,473	445	3,854	...
XVII. Heat, light and power	371,548	2,498	330,953	14,133	88,235	695	38,446	104
XVIII. Leatherware, n.e.i.	33,815	2,974	31,819	8,153	2,055	352	...	...
XIX. Minor wares, n.e.i.	63,441	10,660	122,991	22,683	11,942	738	1,706	597
Total	8,921,082	1,130,079	7,357,735	1,553,284	2,430,263	215,123	773,900	53,692

* Exclusive of amount drawn by working proprietors.

**AMOUNT OF SALARIES AND WAGES PAID TO MALES AND FEMALES IN FACTORIES
IN CERTAIN STATES, 1909, 1910, AND 1911.***

Particulars.	N. South Wales.		Victoria.		Sth. Australia.		Tasmania.	
	Males.	Fe- males.	Males.	Fe- males.	Males.	Fe- males.	Males.	Fem.
1909. Amount paid ...	£ 6,823,732	841,393	5,607,703	1,200,148	...	...	...	...
Per cent. on total ...	89.02	10.98	82.37	17.63	...	...	...	...
Average per employee ...	£ 103.96	37.91	95.61	35.41	...	...	...	...
1910. Amount paid ...	£ 7,728,689	962,697	6,273,921	1,327,011	...	...	...	...
Per cent. on total ...	88.92	11.08	82.54	17.46	...	...	...	...
Average per employee ...	£ 107.84	40.08	101.20	37.67	...	...	...	...
1911. Amount paid ...	£ 8,921,082	1,130,079	7,357,735	1,553,284	2,430,263	215,123	773,900	53,692
Per cent. on total ...	58.76	11.24	82.57	17.43	91.87	8.13	93.51	6.49
Average per employee ...	£ 114.22	43.10	106.62	41.16	113.66	41.44	93.67	34.98

* Exclusive of amount drawn by working proprietors.

3. **Value of Fuel and Light used in Factories, 1911.**—The amount expended in factories on fuel and light is of considerable importance; in 1911 it amounted to £2,752,950, being an increase on the previous year's figures of £117,639. The classes of industry in which fuel was most extensively used were Class V., Metal Works, Machinery, etc., £916,694; Class VI., Connected with Food, Drink, etc., £545,799; Class XVII., Heat, Light, Power, etc., £453,987, of which amount £374,271 was expended on generating electric light and power; and Class III., £355,037, of which £278,460 was represented in brick and pottery works, etc., and glass factories. The following tables shew the value of fuel and light used in the different classes of industry in the several States of the Commonwealth during 1911, and of the total used for each of the five years ended 1911 as far as the figures are available :—

VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH, 1911.

Class of Industry.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	38,481	29,872	1,907	10,810	2,346	1,307	84,723
II. Treating oils and fats, animal, vegetable, etc. ...	15,464	11,414	2,435	6,437	448	344	36,542
III. Processes in stone, clay, glass, etc. ...	173,720	99,407	7,257	45,592	20,443	5,618	355,037
IV. Working in wood ...	15,826	10,947	8,273	3,712	1,506	742	41,005
V. Metal wks., machinery, etc. ...	491,913	134,899	36,552	156,179	22,846	74,305	916,694
VI. Connected with food and drink, etc. ...	156,430	166,870	129,805	52,410	29,300	10,984	545,799
VII. Clothing and textile fabrics, etc. ...	29,476	57,618	6,350	8,080	3,326	1,848	106,698
VIII. Books, paper, printing, and engraving ...	24,601	33,796	10,353	7,241	5,058	1,014	82,063
IX. Musical instruments, etc. ...	526	192	...	24	...	...	742
X. Arms and explosives ...	44	1,414	...	...	...	...	1,458
XI. Vehicles and fittings, saddlery and harness, etc. ...	11,132	12,264	1,455	4,868	2,814	684	33,217
XII. Ship and boat building and repairing ...	10,841	736	181	442	46	23	12,269
XIII. Furniture, bedding, and upholstery ...	5,201	5,949	2,110	2,718	1,193	604	17,775
XIV. Drugs, chemicals, and by-products ...	17,313	11,801	349	8,057	4,092	...	41,612
XV. Surgical and other scientific instruments ...	189	328	68	20	51	...	656
XVI. Jewellery, timepieces, and platedware ...	1,535	2,850	322	602	175	91	5,375
XVII. Heat, light, and power ...	245,068	45,877	14,905	22,081	82,833	43,223	453,987
XVIII. Leatherware, n.e.l. ...	985	1,355	102	18	51	...	2,511
XIX. Minor wares, n.e.l. ...	3,868	10,108	136	514	131	29	14,786
Total ...	1,242,613	637,497	222,560	332,805	176,659	140,816	2,752,950

**VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH DURING
THE YEARS 1907 to 1911.**

Year.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1907 ...	843,686	498,454	208,775	281,532	*	*	*
1908 ...	876,565	538,571	196,908	307,883	141,849	*	*
1909 ...	940,840	566,768	194,776	269,646	140,111	115,864	2,228,005
1910 ...	1,184,282	639,135	216,890	313,731	150,311	130,962	2,635,311
1911 ...	1,242,613	637,497	222,560	332,805	176,659	140,816	2,752,950

* Figures not available.

4. Value of Raw Materials used in Factories, 1911.—The total value of raw materials worked up (*i.e.*, exclusive of fuel, lubricants, etc.) in factories in the Commonwealth during 1911 was £79,041,576, which represents 59.35 per cent. of the total value of the finished products. (See next paragraph hereof.) The following table shows the value of the raw materials worked up in various classes of industry in each State during the year 1911 :—

VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH, 1911.

Class of Industry.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	3,903,225	2,202,360	1,156,457	581,960	185,998	145,619	8,175,619
II. Treating oils and fats, animal, vegetable, etc. ...	697,214	425,771	75,069	146,946	52,612	9,860	1,407,472
III. Processes in stone, clay, glass, etc. ...	281,081	178,482	10,832	39,394	12,526	6,076	528,391
IV. Working in wood, ...	1,875,068	963,785	602,923	763,244	74,363	85,516	4,364,899
V. Metal wks., machinery, etc.	6,849,103	2,596,349	930,519	2,198,174	388,030	861,969	13,824,144
VI. Connected with food and drink, etc. ...	13,866,037	10,906,765	4,841,567	2,396,495	681,324	614,211	33,306,399
VII. Clothing and textile fabrics, etc. ...	2,741,126	4,159,441	724,165	536,162	283,668	115,887	8,560,449
VIII. Books, paper, printing, and engraving ...	805,018	827,281	142,583	157,338	93,473	36,925	2,062,618
IX. Musical instruments, etc. ...	69,461	12,607	...	1,651	...	...	83,719
X. Arms and explosives ...	9,047	76,642	...	...	...	...	85,689
XI. Vehicles and fittings, saddlery and harness, etc. ...	457,671	373,408	121,889	192,053	82,316	37,943	1,265,280
XII. Ship and boat building and repairing ...	165,786	9,723	6,133	9,523	5,775	2,004	198,944
XIII. Furniture, bedding, and upholstery ...	525,717	470,630	94,067	101,565	69,043	20,278	1,281,300
XIV. Drugs, chemicals, and by-products ...	493,145	603,093	14,407	275,680	82,992	...	1,469,317
XV. Surgical and other scientific instruments ...	7,587	8,703	2,115	800	175	...	19,380
XVI. Jewellery, timepieces, and plated ware ...	113,758	181,361	15,419	22,478	13,614	3,640	350,270
XVII. Heat, light, and power ...	509,232	310,964	26,153	62,246	20,019	9,993	938,597
XVIII. Leatherware, n.e.i. ...	142,214	180,227	10,930	4,763	3,164	...	341,298
XIX. Minor wares, n.e.i. ...	190,911	541,933	13,107	19,267	10,254	2,319	777,791
Total ...	33,702,391	25,029,525	8,788,335	7,509,739	2,059,346	1,952,240	79,041,576

The class in which the maximum value of raw materials was used was Class VI., "Connected with Food and Drink, etc.," the value being £33,306,399. The next important class in order of value was Class V., "Metal Works, Machinery, etc.," in which raw materials to the value of £13,824,144 were used. The class in which the minimum value appears is Class XV., "Surgical and other Scientific Instruments," the value being only £19,380. The year 1910 was the first for which reliable and complete returns were collected in every State relating to the value of raw materials worked up in factories; the following table, however, gives particulars for the five years ended 1911, so far as information is available :—

**VALUE OF RAW MATERIAL WORKED UP IN FACTORIES IN COMMONWEALTH
DURING THE YEARS 1907 to 1911.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1907 ...	22,746,162	17,926,128	6,490,086	5,379,636	*	†	†
1908 ...	25,507,414	18,662,070	6,946,550	6,690,976	1,592,216	†	†
1909 ...	27,314,486	19,706,530	7,658,195	6,004,459	1,529,211	‡3,053,979	65,266,860
1910 ...	31,416,579	21,941,255	9,476,819	6,695,255	1,809,959	1,456,369	72,796,236
1911 ...	33,702,391	25,029,525	8,788,335	7,509,739	2,059,346	1,952,240	79,041,576

* Details too incomplete for publication. † Figures not available. ‡ 1909 being the first year in which an attempt was made to collect this information in Tasmania, the returns cannot be accepted as being reliable and are probably overstated.

5. Total Value of Output of Manufacturing Industries, 1911.—The value of the output of new goods manufactured and repairs effected in factories of various classes in each State during the year 1911 is shewn in the following table. The figures given represent not only the increased value due to the process of manufacture, but also include the value of the raw materials used. The difference between the value of the materials used and the total output (see paragraph 6 hereof) is the real value of production from manufactories.

TOTAL VALUE OF OUTPUT OF COMMONWEALTH, 1911.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'w'lh.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural & pastoral pursuits, etc.	4,591,465	2,785,665	1,467,255	728,132	226,500	184,471	9,983,488
II. Treating oils and fats, animal, vegetable, etc.	978,772	635,718	123,184	221,698	68,230	14,701	2,042,303
III. Processes in stone, clay, glass, etc.	1,538,773	863,256	107,670	278,412	135,012	40,464	2,963,587
IV. Working in wood	3,059,227	1,959,959	1,386,156	1,084,110	1,021,743	341,823	8,853,018
V. Metal works, machinery, etc.	12,205,898	5,566,641	1,912,832	3,967,375	858,407	1,344,401	25,855,554
VI. Connected with food and drink, etc.	17,744,466	14,313,109	7,637,832	3,299,911	1,236,039	900,883	45,122,240
VII. Clothing and textile fabrics, etc.	5,287,762	7,488,500	1,430,040	1,048,592	549,661	249,602	16,054,157
VIII. Books, paper, printing, and engraving...	2,269,792	2,412,379	674,889	414,386	382,373	153,431	6,307,250
IX. Musical instruments, etc.	146,583	39,371	...	4,058	...	...	190,012
X. Arms and explosives	11,622	135,068	...	...	...	...	146,690
XI. Vehicles and fittings, saddlery and harness, etc.	1,076,110	905,384	324,766	443,640	188,326	82,771	3,020,997
XII. Ship and boat building and repairing...	547,117	39,661	22,283	35,458	12,138	7,306	663,963
XIII. Furniture, bedding, and upholstery	1,047,000	898,764	235,996	243,864	134,971	53,807	2,614,402
XIV. Drugs, chemicals, and by-products	910,912	1,026,646	24,026	424,756	149,306	...	2,535,646
XV. Surgical and other scientific instruments	26,948	23,175	7,073	2,400	1,803	...	61,399
XVI. Jewellery, timepieces, and platedware	240,554	347,102	30,107	53,514	30,420	10,028	711,725
XVII. Heat, light, and power	2,127,822	1,214,515	251,525	293,215	287,312	136,124	4,310,538
XVIII. Leatherware, n.e.i.	210,572	266,801	17,056	9,062	5,760	...	509,251
XIX. Minor wares, n.e.i.	324,616	826,149	22,972	38,288	23,085	5,275	1,240,365
Total ...	54,346,011	41,747,863	15,675,662	12,580,851	5,311,086	3,525,087	133,186,560

It may be seen that the State of New South Wales far outstrips the other States in the total value of the output of her factories, the value being £54,346,011, or 40.80 per cent. on the total for the Commonwealth. The next State in order of value is Victoria, which produced 31.35 per cent.; the value of the output of Queensland was 11.77 per cent.; of South Australia 9.44 per cent.; of Western Australia 3.99 per cent.; and of Tasmania 2.65 per cent. The four most important classes in order of value of output (Classes VI., V., VII. and I.) are the same as in order of value of raw materials used.

The following statement shews the value of output of factories in each State during the five years ended 1911 so far as particulars are available:—

TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH DURING THE YEARS 1907 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1907 ...	37,231,012	29,693,634	11,209,515	8,923,004	4,056,365	†	†
1908 ...	40,163,826	30,787,760	11,182,009	10,471,671	4,008,604	†4,882,430	107,501,758
1909 ...	42,960,689	32,898,235	12,823,695	9,928,105	4,008,604	3,073,246	120,860,158
1910 ...	49,615,643	36,660,854	15,792,109	11,184,695	5,331,611	3,525,087	133,186,560
1911 ...	54,346,011	41,747,863	15,675,662	12,580,851	5,311,086		

PER HEAD OF MEAN POPULATION.

Year.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1907 ...	24.12	24.23	20.65	24.02	*	†	†
1908 ...	25.53	24.82	20.60	27.44	15.73	†	†
1909 ...	26.88	26.09	23.16	25.33	15.23	†25.67	25.15
1910 ...	30.38	28.69	26.89	27.88	16.73	16.09	27.66
1911 ...	32.70	31.62	25.52	30.59	18.52	18.52	29.66

* Details too incomplete for publication. † Figures not available.

† See note (1) to last table § 6, 4.

6. Value of Production of Manufacturing Industries, 1911.—The difference between the figures given in paragraph 5 and the corresponding figures in paragraph 4 hereof represents the amount added to the value of the raw materials by the process of manufacture. This is the real measure of the value of production of manufacturing industries. The following table shews the value added in this manner in each State during the year 1911 for the various classes of factories:—

VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH, 1911.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	Cwealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	688,240	583,305	310,798	146,172	40,502	38,852	1,807,869
II. Treating oils and fats, animal, vegetable, etc. ...	281,558	209,947	48,115	74,752	15,618	4,841	634,831
III. Processes in stone, clay, glass, etc. ...	1,257,692	684,774	96,638	239,018	122,486	34,388	2,435,196
IV. Working in wood ...	1,184,159	996,174	783,233	320,866	947,380	256,307	4,488,119
V. Metal works, machinery, etc. ...	5,356,795	2,970,292	982,313	1,769,201	470,377	482,432	12,031,410
VI. Connected with food and drink, etc. ...	3,878,429	3,406,344	2,796,265	893,416	554,715	286,672	11,815,841
VII. Clothing and textile fabrics, etc. ...	2,546,636	3,329,059	705,875	512,430	265,993	133,715	7,493,708
VIII. Books, paper, printing, and engraving ...	1,464,774	1,585,098	532,306	257,048	288,900	116,506	4,244,632
IX. Musical instruments, etc. ...	77,122	26,764	...	2,407	...	...	106,233
X. Arms and explosives ...	2,575	58,426	...	...	...	...	61,001
XI. Vehicles and fittings, saddlery and harness, etc. ...	618,439	531,976	202,877	251,587	106,010	44,828	1,755,717
XII. Ship and boat building and repairing ...	381,331	29,933	16,150	25,935	6,363	5,302	465,019
XIII. Furniture, bedding, and upholstery ...	521,283	428,134	141,929	142,299	65,928	33,529	1,333,102
XIV. Drugs, chemicals, and by-products ...	417,767	423,553	9,619	149,076	66,314	...	1,066,329
XV. Surgical and other scientific instruments ...	19,361	14,472	4,958	1,600	1,628	...	42,019
XVI. Jewellery, timepieces, and plated ware ...	126,796	165,741	14,688	31,036	16,806	6,388	361,455
XVII. Heat, light, and power ...	1,618,600	903,551	225,372	230,969	267,293	126,131	3,371,016
XVIII. Leatherware, n.e.i. ...	68,358	86,574	6,126	4,299	2,596	...	167,953
XIX. Minor wares, n.e.i. ...	133,705	284,216	9,865	19,001	12,631	2,956	462,574
Total ...	20,643,620	16,718,338	6,887,327	5,071,112	3,251,740	1,572,847	54,144,984

It may be seen that the amount of the value added in each State is in the same order as in the case of value of output. The value added to raw material by process of manufacture and amount per head of mean population is shewn in the following statement for the years 1907 to 1911:—

**VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH,
1907 to 1911.**

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tas.	C'wealth.
VALUE.							
1907 ...	£ 14,484,850	£ 11,767,506	£ 4,719,429	£ 3,543,368	£ *	£ †	£ †
1908 ...	14,656,412	12,125,690	4,235,459	3,780,695	2,464,149	†	†
1909 ...	15,646,203	13,191,705	5,165,500	3,923,646	2,379,393	£1,829,451	42,234,898
1910 ...	18,199,064	14,719,599	6,315,290	4,489,440	2,723,652	1,616,877	48,063,922
1911 ...	20,643,620	16,718,338	6,887,327	5,071,112	3,251,740	1,572,847	54,144,984

PER HEAD OF MEAN POPULATION.

1907 ...	9.38	9.60	8.70	9.54	*	†	†
1908 ...	9.32	9.77	7.80	9.91	9.66	†	†
1909 ...	9.79	10.46	9.33	10.01	9.42	£9.61	9.88
1910 ...	11.14	11.48	10.68	11.19	10.05	8.47	11.00
1911 ...	12.42	12.66	11.21	12.33	11.34	8.26	12.06

* Details too incomplete for publication. † Figures not available. ‡ See note (1) to last table § 6, 4.

It may thus be seen that in 1911 the positions of the two leading States, New South Wales and Victoria, as also those of Queensland and Western Australia, in regard to total value of output of factories per head of mean population, do not coincide in regard to value added per head. The other two States retain their relative positions.

As the total value of the output for the Commonwealth was estimated at £133,186,560, there remained, after payment of £79,041,576, the value of the raw materials used, of £27,531,876 for salaries and wages, and of £2,752,950 for fuel, the sum of £23,860,158 to provide for all other expenditure and profits. The following table gives corresponding particulars for each State, expressed absolutely and as percentages of the total value of the output:—

**VALUE OF OUTPUT AND COST OF PRODUCTION IN COMMONWEALTH
FACTORIES, 1911.**

State.	Raw Materials Used.	Fuel and Light.	Salaries and Wages.	All other Expenditure Interest, and Profits.	Total Value of Output.
VALUE AND COST, ETC.					
	£	£	£	£	£
New South Wales ...	33,702,391	1,242,613	10,051,161	9,349,846	54,346,011
Victoria ...	25,029,525	637,497	8,911,019	7,169,822	41,747,863
Queensland ...	8,788,335	222,560	3,113,835	3,550,932	15,675,662
South Australia ...	7,509,739	332,805	2,645,386	2,092,921	12,580,851
Western Australia ...	2,059,346	176,659	1,982,383	1,092,198	5,311,086
Tasmania ...	1,952,240	140,816	827,592	604,439	3,525,087
Commonwealth ...	79,041,576	2,752,950	27,531,876	23,860,158	133,186,560

PERCENTAGE OF COSTS, ETC., ON TOTAL VALUE.

	%	%	%	%	%
New South Wales ...	62.01	2.29	18.50	17.20	100.00
Victoria ...	59.95	1.53	21.35	17.17	100.00
Queensland ...	56.06	1.42	19.86	22.66	100.00
South Australia ...	59.69	2.65	21.03	16.63	100.00
Western Australia ...	38.77	3.33	37.33	20.57	100.00
Tasmania ...	55.38	3.99	23.48	17.15	100.00
Commonwealth ...	59.35	2.07	20.67	17.91	100.00

§ 7. Land, Buildings, Plant and Machinery.

1. **General.**—As an indication of the permanent character and stability of the industries which have been established in the Commonwealth, it may be noted that the values of land and buildings and of plant and machinery used in the factories are rapidly increasing. Thus, for the whole Commonwealth the total value of land and buildings and plant and machinery has increased from 1906 to 1911 by £17,273,655, *i.e.*, from £46,824,489 to £64,098,144, or at the rate of £3,454,731 per annum.

The following statement shews for the year 1911 the values of land and buildings and of plant and machinery used in connection with manufacturing industries in each State:—

VALUE OF LAND, BUILDINGS, PLANT AND MACHINERY IN CONNECTION WITH MANUFACTURING INDUSTRIES, 1911.

Value of—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
	£	£	£	£	£	£	£
Land and buildings ...	13,474,455	9,921,520	3,277,776	2,954,855	1,819,342	1,050,987	32,498,935
Plant and machinery ...	12,510,600	6,336,373	4,947,259	2,506,000	2,082,777	1,216,200	31,599,209
Total ...	25,985,055	18,257,893	8,225,035	5,460,855	3,902,119	2,267,187	64,098,144

It may be seen from the above table that the total capital invested in land, buildings, plant, and machinery in manufacturing industries in the Commonwealth during the year 1911 was approximately £64,098,144 (or £14.27 per head of mean population); of that sum £32,498,935 was invested in land and buildings occupied as manufactories, the remaining £31,599,209 being the value of the plant and machinery used in connection therewith.

2. **Value of Land and Buildings.**—The value of the land and buildings occupied in connection with manufacturing industries may be conveniently classified according to the nature of the industry conducted therein.

(i.) *Total Value in Commonwealth, 1907 to 1911.* The following table shews for the whole Commonwealth the approximate values of land and buildings occupied in connection with manufacturing industries of various classes during each year from 1907 to 1911 inclusive:—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN COMMONWEALTH, 1907 to 1911.

Class of Industry.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	781,733	847,113	870,588	921,785	978,978
II. Treating oils & fats, animal, vegetable, etc. ...	343,424	359,624	376,681	394,079	445,499
III. Processes in stone, clay, glass, etc. ...	820,332	937,753	956,733	1,073,612	1,228,889
IV. Working in wood ...	1,090,551	1,195,581	1,285,267	1,492,673	1,668,045
V. Metal works, machinery, etc. ...	3,709,314	4,378,755	4,415,525	4,554,693	5,000,274
VI. Connected with food and drink, etc. ...	6,708,611	7,161,845	7,191,976	7,399,625	8,167,496
VII. Clothing and textile fabrics, etc. ...	3,396,599	3,377,905	3,809,148	4,191,488	4,601,924
VIII. Books, paper, printing, and engraving ...	2,357,799	2,483,693	2,642,029	2,779,754	2,964,466
IX. Musical instruments, etc. ...	27,405	31,054	33,314	75,632	82,168
X. Arms and explosives ...	31,152	34,566	33,016	38,763	41,462
XI. Vehicles & fittings, saddlery & harness, etc. ...	1,079,859	1,172,556	1,186,750	1,325,152	1,453,077
XII. Ship and boat building and repairing ...	991,907	988,141	1,033,513	1,062,868	1,163,299
XIII. Furniture, bedding, and upholstery ...	633,237	666,289	697,273	764,170	898,093
XIV. Drugs, chemicals, and by-products ...	444,060	531,765	543,507	687,162	760,441
XV. Surgical and other scientific instruments ...	31,779	33,054	56,378	56,149	61,703
XVI. Jewellery, timepieces, and platedware ...	204,734	226,352	232,483	271,834	300,717
XVII. Heat, light, and power ...	1,855,438	1,928,734	2,026,611	2,112,220	2,320,348
XVIII. Leatherware, n.e.i. ...	57,043	91,036	83,578	100,096	111,506
XIX. Minor wares, n.e.i. ...	193,797	218,840	210,325	220,984	250,550
Total ...	24,758,774	26,664,676	27,678,695	29,512,739	32,498,935

It may be seen from the above table that the total net increase during the four years was £7,740,161, or an annual average of £1,935,040. The largest increases were in Classes V. and VII., and amounted to £1,290,930 and £1,205,325 respectively.

(ii.) *Value in each State, 1911.* The following table gives similar information for each State up to the 31st December, 1911:—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1911.

Class of Industry.	N.S.W.	Victoria.	Q'land	S.A.	W.A.	Tas.	C'w'lth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	386,309	377,761	50,658	97,378	29,570	17,299	978,978
II. Treating oils and fats, animal, vegetable, etc. ...	237,032	113,721	23,531	57,765	8,350	4,950	445,499
III. Processes in stone, clay, glass, etc. ...	671,210	352,993	29,555	93,894	52,094	24,140	1,228,639
IV. Working in wood ...	801,240	318,234	164,410	134,729	174,853	76,579	1,668,045
V. Metal works, machinery, etc. ...	2,259,793	1,169,173	531,363	510,941	468,826	60,175	5,000,274
VI. Connected with food and drink, etc. ...	2,650,960	2,449,360	1,350,618	712,584	407,096	576,878	8,167,496
VII. Clothing and textile fabrics, etc. ...	1,986,901	1,668,060	289,824	334,427	163,830	108,882	4,601,924
VIII. Books, paper, printing and engraving ...	1,193,411	877,235	399,430	277,310	174,018	43,032	2,964,465
IX. Musical instruments, etc. ...	57,635	21,383	...	3,100	...	...	82,168
X. Arms and explosives ...	5,600	33,862	...	...	...	...	41,462
XI. Vehicles and fittings, saddlery and harness, etc. ...	565,963	402,648	130,891	216,700	83,455	50,415	1,453,077
XII. Ship and boat building and repairing ...	617,224	473,900	8,895	59,390	2,030	1,950	1,163,239
XIII. Furniture, bedding and upholstery ...	363,774	313,695	79,179	71,123	40,710	29,612	893,093
XIV. Drugs, chemicals, and by-products ...	241,977	292,150	10,500	136,717	79,097	...	760,441
XV. Surgical and other scientific instruments ...	26,848	14,895	12,410	4,520	3,030	...	61,703
XVI. Jewellery, timepieces, and platedware ...	109,452	115,806	19,766	38,740	7,150	9,800	300,717
XVII. Heat, light, and power ...	1,145,634	747,492	161,303	117,535	104,093	44,175	2,320,348
XVIII. Leatherware, n.e.l. ...	42,993	47,303	8,800	7,160	5,250	...	111,506
XIX. Minor wares, n.e.l. ...	110,378	91,810	6,580	25,792	12,590	3,100	250,550
Total ...	13,474,455	9,921,520	3,277,776	2,951,855	1,819,342	1,050,987	32,498,935

The maximum value for the Commonwealth of land and buildings in any particular class was in Class VI., amounting to £8,167,496, or 25.13 per cent. on the total value. The next classes in importance were Classes V., VII., VIII., and XVII., in which the values were £5,000,274, £4,601,924, £2,964,466, and £2,320,348 respectively. The sum of the values for the five classes mentioned amounted to £23,054,508, or 70.94 per cent. on the total value for all classes.

(iii.) *Total Value in each State, 1907 to 1911.* The following table shows the total value of land and buildings occupied as manufactories in each State at the end of each year from 1907 to 1911 inclusive:—

TOTAL VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1907 to 1911.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1907...	9,508,259	8,376,642	2,261,539	2,140,516	1,637,207	834,611	24,758,774
1908...	10,390,260	8,589,027	2,763,035	2,311,650	1,565,756	1,044,898	26,664,676
1909...	11,014,362	8,642,344	2,888,923	2,432,655	1,522,692	1,177,719	27,678,695
1910...	12,108,776	9,012,263	3,045,974	2,648,638	1,674,953	1,022,115	29,512,739
1911...	13,474,455	9,921,520	3,277,776	2,954,855	1,819,342	1,050,987	32,498,935

It may be seen that since 1907 there has been a general, though in two States an irregular increase; the temporary fall in Western Australia was probably due to the general reduction in values of real estate in that State during the past few years. The fall in Tasmania for 1910 was due to the closing down of a large pyrites works.

3. **Value of Plant and Machinery.**—The following table shews for the whole Commonwealth the approximate value of plant and machinery used in connection with factories at the end of each year from 1907 to 1911 inclusive:—

**VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN COMMONWEALTH,
1907 to 1911.**

Class of Industry.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	644,597	671,015	754,556	829,255	877,820
II. Treating oils & fats, animal, vegetable, etc.	331,595	349,997	349,479	360,660	435,315
III. Processes in stone, clay, glass, etc.	752,084	833,809	901,193	1,109,139	1,299,774
IV. Working in wood... ..	1,506,933	1,583,496	1,623,497	1,852,296	2,207,703
V. Metal works, machinery, etc.	4,237,810	4,633,656	4,941,632	5,255,575	5,722,956
VI. Connected with food and drink, etc.	7,340,941	7,744,682	7,772,770	8,212,440	8,570,565
VII. Clothing and textile fabrics, etc.	1,132,083	1,158,698	1,280,102	1,403,135	1,538,062
VIII. Books, paper, printing, and engraving ...	1,993,135	2,091,168	2,207,930	2,362,268	2,481,399
IX. Musical instruments, etc.	7,829	9,124	11,263	16,443	17,924
X. Arms and explosives	45,613	46,113	45,940	47,012	56,255
XI. Vehicles & fittings, saddlery & harness, etc.	195,271	204,138	220,746	249,973	283,470
XII. Ship and boat building, and repairing ...	352,486	432,803	434,905	448,429	478,012
XIII. Furniture, bedding, and upholstery ...	106,613	117,481	126,000	150,774	177,924
XIV. Drugs, chemicals, and by-products ...	332,349	398,028	435,019	517,781	602,276
XV. Surgical and other scientific instruments ...	6,340	8,144	9,215	9,929	11,158
XVI. Jewellery, timepieces, and platedware ...	45,927	46,160	43,980	49,490	61,765
XVII. Heat, light, and power	5,555,544	5,481,759	5,561,333	5,961,816	6,611,770
XVIII. Leatherware, n.e.i.	16,223	18,989	19,555	24,651	25,565
XIX. Minor wares, n.e.i.	82,435	98,503	116,097	120,669	138,896
Total	24,686,108	25,927,763	26,855,212	28,976,735	31,599,209

It may be seen that during the period in question there has been a steady and substantial net increase amounting in all to £6,913,101, or an annual average of £1,728,275. The increase has occurred in all classes of industry, the largest increase being in Class V., "Metal Works, Machinery, etc.," amounting to £1,485,146, while the two next largest were in Class VI., "Connected with Food and Drink, etc.," amounting to £1,229,624, and Class XVII., "Heat, Light, and Power," with an increase of £1,056,226.

(i.) **Total Value in each State, 1907 to 1911.** The classified figures in the preceding table for the whole Commonwealth are shewn below for each State. It will be seen that the progress in value referred to is general throughout the States. New South Wales shews by far the largest increase, viz., £3,354,828; while Victoria comes next with £1,564,915.

VALUE OF PLANT AND MACHINERY IN FACTORIES, 1907 to 1911.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1907	9,155,772	6,771,458	3,989,679	1,900,744	1,893,351	975,104	24,686,108
1908	9,718,842	6,957,606	4,470,145	2,064,097	1,744,652	972,421	25,927,763
1909	10,330,724	7,140,304	4,457,314	2,135,203	1,728,207	1,063,460	26,855,212
1910	11,578,620	7,601,085	4,631,519	2,225,718	1,893,602	1,046,191	28,976,735
1911	12,510,600	8,336,373	4,947,259	2,506,000	2,082,777	1,216,200	31,599,209

(ii.) **Classified Value in each State, 1911.** The following table shews the value of plant and machinery used in factories in each State during the year 1911, classified according to the nature of the industry in which used:—

VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN EACH STATE, 1911.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	349,418	283,339	116,122	66,620	21,920	40,401	877,820
II. Treating oils and fats, animal, vegetable, etc. ...	243,434	125,035	40,209	18,602	6,600	1,435	435,315
III. Processes in stone, clay, glass, etc. ...	808,049	291,067	56,467	90,053	40,026	14,112	1,299,774
IV. Working in wood ...	693,017	377,250	423,234	71,291	433,121	209,790	2,207,703
V. Metal wks., machinery, etc. ...	2,894,994	1,166,721	485,195	465,612	331,198	379,236	5,722,956
VI. Connected with food and drink, etc. ...	2,855,174	1,852,023	2,838,527	531,910	344,782	148,149	8,570,565
VII. Clothing and textile fabrics, etc. ...	485,056	761,098	128,410	85,479	26,956	51,063	1,538,062
VIII. Books, paper, printing, and engraving ...	964,767	812,758	254,774	195,319	172,112	62,269	2,481,999
IX. Musical instruments, etc. ...	10,834	6,800	...	790	...	...	17,924
X. Arms and explosives ...	1,000	55,255	...	...	...	...	56,255
XI. Vehicles and fittings, saddlery and harness, etc. ...	99,196	83,976	32,746	42,199	17,926	7,427	283,470
XII. Ship and boat building and repairing ...	387,503	64,386	11,143	11,640	1,110	2,230	478,012
XIII. Furniture, bedding, and upholstery ...	53,118	55,969	23,531	29,260	10,882	5,164	177,924
XIV. Drugs, chemicals, and by-products ...	196,370	176,637	4,400	118,336	106,533	...	602,276
XV. Surgical and other scientific instruments ...	4,400	3,396	1,467	1,000	895	...	11,158
XVI. Jewellery, timepieces, and platedware ...	23,470	28,073	3,502	4,453	1,147	1,120	61,763
XVII. Heat, light, and power ...	2,344,592	2,112,853	525,363	770,600	565,067	293,295	6,611,770
XVIII. Leatherware, n.e.i. ...	13,087	10,446	1,097	240	695	...	25,565
XIX. Minor wares, n.e.i. ...	63,121	69,791	1,072	2,595	1,807	509	138,896
Total ...	12,510,600	8,336,373	4,947,259	2,506,000	2,082,777	1,216,200	31,599,209

The greatest value for any particular class of industry is for Class VI., "Connected with Food and Drink, etc.," and amounts to £8,570,565, or 27.12 per cent. on the total for all classes. The next in order of importance is Class XVII., "Heat, Light, and Power," which amounts to £6,611,770, or 20.92 per cent. on the total; followed by Class V., "Metal Works, Machinery, etc.," amounting to £5,722,956, or 18.11 per cent. on the total value. The total for the three classes just specified amounts to £20,905,291, or 66.15 per cent. on the total value for all classes.

§ 8. Individual Industries.

1. **General.**—The preceding remarks and tables furnish a general view of the recent development of particular classes of industries in Australia treated under the nineteen categories referred to in § 1, 3 hereof. In order to make the information complete, it must necessarily be supplemented by details exhibiting the development of individual industries. This alone will furnish adequate information as to the channels into which the main efforts of Australian manufacture flow. While it is not possible, within the limits of this article, to give anything like a detailed account of the manufacturing industries of the Commonwealth, it is proposed to deal herein with such particular industries as are of special importance by reason of the number of persons employed, the number of factories, the amount of capital invested therein, the value of the production, or other features of special interest. In cases where there are only one or two establishments of a particular class in any State, returns relative to output are not published, in order to avoid disclosing information as to the operations of individual factories.

2. **Tanning Industry.**—In Class I. (see § 1. 3 hereof) the most important industry is tanning. Until recent years the production of tanneries in Australia was confined to the coarser class of leathers, but lately the tanning of the finer skins has been undertaken with satisfactory results. The position of the industry in the several States in 1911 was as follows:—

TANNERIES, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	76	56	19	14	4	7	176
" employees	1,039	1,616	230	223	68	71	3,247
Actual horse-power of engines employed ...	1,044	1,401	321	208	97	97	3,168
Approx. value of lands and buildings £	107,422	170,949	16,620	25,054	14,320	9,549	343,914
Approx. value of plant and machinery £	82,241	113,027	17,364	11,432	8,850	8,331	241,245
Total amount of wages paid during year £	104,695	163,446	23,735	25,396	7,701	7,233	332,206
Value of fuel used	7,160	10,724	980	1,784	635	428	21,711
Value of raw material worked up ...	786,817	974,552	149,993	111,895	34,588	41,184	2,099,034
Total value of output	982,023	1,258,431	202,220	155,265	46,974	53,337	2,698,250
Value added in process of manufacture £	195,206	283,879	52,222	43,370	12,386	12,153	599,216

(i.) *Progress of Tanning, etc. Industries, 1907 to 1911.* For years prior to 1908 returns for tanneries are not generally available separately, but are grouped with the wool-scouring and fellmongering industries. The development of the tanning, fellmongering, and wool-scouring industries during the period 1907 to 1911 is shewn in the following table, from which it will be seen that though the number of factories is almost stationary, the number of employees shews a satisfactory increase, amounting to 14.35 per cent. during the period under consideration.

DEVELOPMENT OF TANNING, Etc., INDUSTRIES, 1907 to 1911.

State.	Number of Factories.					Number of Employees.					Approximate Value of Plant and Machinery.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
											£	£	£	£	£
N. S. Wales ...	152	146	147	140	135	2,507	2,396	2,544	2,640	2,642	159,850	167,071	188,820	245,082	242,441
Victoria ...	90	92	93	89	88	1,893	2,001	1,999	1,956	2,123	124,064	133,376	142,429	141,702	165,964
Queensland ...	37	39	36	40	37	615	685	667	769	659	81,225	91,492	88,337	96,811	109,193
S. Australia ...	12	14	15	17	17	294	341	288	286	274	9,197	11,991	14,161	13,986	14,677
West. Australia	3	3	4	4	4	64	69	69	67	68	5,500	5,640	5,508	6,070	8,850
Tasmania ...	6	9	8	8	7	67	78	68	66	71	6,550	7,476	7,600	7,150	8,331
Commonwealth	300	303	303	298	288	5,440	5,570	5,635	5,784	5,837	386,386	417,046	446,855	510,801	549,456

(ii.) *Production of Tanneries, 1911.* The quantity of raw materials used and the quantity and value of leather produced in tanneries in each State during the year 1911 are shewn in the following table:—

RAW MATERIALS USED AND LEATHER PRODUCED IN TANNERIES, 1911.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
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RAW MATERIALS USED.

Hides ... No. (,000 omitted)	530	524	92	87	25	19	1,277
Pelts treated No. ...	4,643	*	*	58	*
Bark Tons	11,681	10,856	1,909	1,590	557	556	27,149

LEATHER AND BASILS PRODUCED.

LEATHER—							
Quantity lbs. (,000 omitted)	13,907	15,341	2,849	2,378	942	419	35,836
Value £	790,019	875,000	185,066	150,826	46,975	36,040	2,083,926
BASILS—							
Quantity lbs. (,000 omitted)	4,324	576	*	55	...	18	*
Value £	159,211	28,000	9,088	3,400	...	849	200,548

* Not available.

3. Soap and Candle Factories.—In Class II. (see § 1. 3 hereof) the manufactures of soap and candles are the most important industries. These two manufactures are frequently carried on in the same establishments, so that separate returns cannot be obtained; it may, however, be said generally that the manufacture of soap is the more important of the two. The following table gives particulars of soap and candle factories in each State during the year 1911:—

SOAP AND CANDLE FACTORIES, 1911.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Cwlt.
Number of factories ...	37	16	18	6	2	2	61
" employees ...	658	538	175	221	46	30	1,668
Actual horse-power of engines employed ...	585	381	145	115	17	23	1,266
Approximate value of land and buildings ...	£ 166,408	100,000	23,681	44,585	8,350	4,800	347,824
" plant and machinery ...	£ 150,453	113,664	40,209	14,262	6,600	1,065	326,273
Total amount of wages paid during year ...	£ 49,555	53,474	18,856	20,545	3,964	2,198	148,592
Value of fuel used ...	£ 12,205	10,177	2,435	6,092	*	*	31,701
Value of raw material worked up ...	£ 359,096	378,393	75,069	143,847	*	*	1,018,757
Total value of output ...	£ 597,544	672,000	123,184	213,782	*	*	1,588,416
Value added in process of manufacture ...	£ 238,448	193,607	48,115	69,935	*	*	569,659

* As there are only two soap and candle factories in each of these States, returns relative to output, etc., are not disclosed.

(i.) *Development of Soap and Candle Factories, 1907 to 1911.* The following table gives particulars for the last five years regarding the number of factories and employees and the value of plant and machinery in these industries in each State:—

DEVELOPMENT OF SOAP AND CANDLE FACTORIES, 1907 to 1911.

State.	Number of Factories.					Average Number of Employees.					Approximate Value of Plant and Machinery.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
N.S.W. ...	34	29	26	33	37	553	553	571	624	658	127,311	135,786	127,437	132,004	150,453
Vic. ...	15	17	17	16	16	510	535	568	540	538	106,326	109,768	111,252	113,418	113,664
Q'land... ..	15	16	18	17	18	142	159	174	168	175	35,562	35,794	40,102	39,202	40,209
S. Aus... ..	7	6	7	6	6	166	164	185	192	221	11,896	12,484	14,224	13,128	14,262
W. Aus... ..	3	3	3	4	2	57	50	50	50	46	6,838	4,910	8,200	6,725	6,600
Tas. ...	2	2	2	2	2	35	35	39	32	30	3,600	4,000	3,800	1,216	1,085
C'wlt... ..	76	73	73	78	81	1,463	1,496	1,582	1,606	1,668	291,633	302,742	300,015	305,693	326,273

(ii.) *Production of Soap and Candles, 1907 to 1911.* The subjoined statement shows that, taking the Commonwealth as a whole, there has been a considerable and consistent increase in the output of soap during the past four years. The quantity of candles produced during 1911 shows a falling off as compared with the two previous years, but a slight increase over the output of 1908.

PRODUCTION OF SOAP AND CANDLES, 1907 to 1911.

State.	Soap.					Candles.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
	cwt.	cwt.	cwt.	cwt.	cwt.	lbs.	lbs.	lbs.	lbs.	lbs.
N.S.W. ...	225,217	217,321	206,678	245,538	269,019	5,656,354	5,566,776	6,922,488	6,689,875	5,388,848
Vic. ...	153,478	162,757	176,162	187,433	189,048	5,341,056	4,232,960	5,091,520	5,014,016	4,654,384
Q'land... ..	59,900	67,755	73,446	74,338	71,936	1,023,160	1,023,160	537,312	985,040	1,188,880
S. Aus... ..	56,745	61,614	66,043	66,800	70,080	1,975,075	1,806,725	1,678,900	1,788,224	1,771,175
W. Aus... ..	31,774	29,767	35,419	34,707	†	1,300,625	1,259,214	1,309,066	1,225,356	†
Tas. ...	9,679	10,500	9,900	8,642	†	672,000	448,000	537,600	495,040	†
C'wlt... ..	536,793	549,714	567,648	617,458	639,458	14,945,110	14,331,835	16,096,886	16,197,551	14,573,662

* Not available. † Incomplete. ‡ Figures not available for publication.

(iii.) *Raw Material Used, 1911.* The following statement shews the quantity of certain raw materials used in soap and candle factories in each State during the year 1911 :—

RAW MATERIALS USED IN SOAP AND CANDLE FACTORIES, 1911.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
Tallow ... cwt.	113,893	143,167	35,640	48,696	*	*	356,471
Alkali ...	56,202	40,133	21,373	9,006	*	*	133,675
Cocoanut oil ... gal.	349,026	124,677	...	31,909	...	...	505,612

* Figures not available for publication.

In addition to the above, Queensland returns shew 4 cwt. and Tasmanian returns 90 cwt. of copra.

4. *Saw Mills, etc.*—The most important industry in Class IV. is that of saw-milling. As separate particulars of forest saw mills are not available for some of the States, both forest and other saw mills as well as joinery, moulding and box factories have been combined in the following table.

SAW MILLS, FOREST AND OTHER, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ...	615	321	264	89	72	133	1,494
employees ...	7,733	6,144	4,543	1,777	4,517	2,071	26,785
Actual horse-power of engines employed	13,801	7,087	6,334	1,432	3,490	2,405	34,639
Approx. value of land and buildings	£ 736,467	266,117	153,470	126,734	174,863	74,979	1,532,620
plant and machinery	£ 654,220	356,727	420,059	67,991	433,121	200,765	2,141,883
Total amount of wages paid during year	£ 693,738	594,857	390,201	184,054	708,628	177,731	2,749,209
Value of fuel used	£ 14,888	9,938	7,805	3,411	1,506	740	37,308
Value of raw material worked up	£ 1,810,817	901,571	587,827	748,543	74,363	85,212	4,206,333
Total value of output	£ 2,937,269	1,821,800	1,359,197	1,054,995	1,021,743	340,796	8,535,800
Value added in process of manufacture	£ 1,126,452	920,229	771,370	306,452	947,380	255,584	4,327,467

5. *Agricultural Implement Factories.*—The manufacture of agricultural implements is an important industry in Australia, and is of particular interest owing to the fact that it is one of the first industries to which what has been called the "New Protection" system was sought to be applied (see Section XXVII. hereof). The nature of the machines manufactured may be gathered from the machines scheduled in the Customs tariff, 1906-7, which includes stripper harvesters, strippers, stump-jump ploughs, disc cultivators, winnowers, corn-shellers and baggers, drills, and other implements usually employed in agriculture. The stripper-harvester, which combines the stripper with a mechanism for winnowing and bagging grain, is an Australian invention, and is exported to many countries.

The following table gives particulars of the agricultural implement works of Australia for the year 1911 :—

AGRICULTURAL IMPLEMENT WORKS, 1911.

Items.	N.S.W.	Victoria	Q'land.	S.Aust.	W.A.	Tas.	C'w'lth.
Number of factories ...	20	59	3	63	7	3	155
employees ...	615	2,717	89	1,616	97	22	5,156
Actual horse-power of engines employed	170	921	46	1,125	79	6	2,347
Approx. value of land and buildings	£ 61,944	126,755	3,139	80,916	10,915	800	284,469
plant and machinery	£ 18,360	140,133	3,672	73,294	8,951	615	245,025
Total amount of wages paid during year	£ 63,318	297,824	7,424	170,609	11,059	688	550,922
Value of fuel used	£ 1,855	19,299	867	9,776	1,018	27	32,342
Value of raw material worked up	£ 247,098	345,665	13,272	163,308	41,393	586	811,322
Total value of output	£ 341,780	831,474	25,350	490,499	55,332	1,929	1,666,364
Value added in process of manufacture	£ 94,682	465,809	12,078	237,191	13,939	1,343	845,042

(i.) *Development of Agricultural Implement Works.* The following table shews the progress of this industry during the years 1907 to 1911 :—

AGRICULTURAL IMPLEMENT WORKS, 1907 to 1911.

State.	Number of Factories.					Number of Employees.					Approximate Value of Plant and Machinery.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
N.S.W.	21	20	21	21	20	499	434	481	600	615	£ 16,426	£ 16,008	£ 18,063	£ 18,575	£ 18,360
Vic. ...	55	52	52	50	59	1,618	1,441	1,892	2,255	2,717	66,492	69,335	84,067	105,429	140,133
Q'land	4	2	4	4	3	142	108	284	364	89	9,444	8,244	12,121	14,283	3,672
S. Aus.	49	54	59	60	63	827	1,092	1,346	1,544	1,616	34,034	38,157	49,405	62,315	73,204
W. Aus.	2	3	5	6	7	15	25	49	73	97	3,450	4,259	5,277	6,668	8,951
Tas. ...	13	9	7	9	3	45	34	29	32	22	796	235	845	920	615
C'w'lh	144	140	148	150	155	3,146	3,134	4,081	4,868	5,156	130,642	136,238	169,778	208,185	245,025

6. **Engineering, Ironworks, and Foundries.**—The classification in these industries is not very satisfactory. Generally, engineering shops, ironworks, and foundries are included, as also are factories for making nails, safes, patterns, meters, and springs. Railway workshops, agricultural implement factories, cyanide, smelting, pyrites, and metallurgical works, galvanised iron, stoves and ovens, and wire working establishments are not included. The combination of industries is rendered necessary by the limited classification still adopted by some of the States.

ENGINEERING, IRONWORKS, AND FOUNDRIES, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lh.
Number of factories ...	263	336	96	53	51	21	820
employees ...	8,586	7,867	2,768	1,834	1,062	422	22,539
Actual horse-power of engines employed	7,452	5,237	1,068	1,226	676	356	16,015
Approx. value of land and buildings £	751,914	471,524	152,671	85,936	96,990	30,890	1,579,925
plant and machinery £	718,691	602,035	166,699	101,860	72,149	44,971	1,706,405
Total amount of wages paid during year £	908,267	806,657	253,356	207,875	127,071	39,377	2,342,603
Value of fuel used ...	£ 56,396	£ 81,240	14,371	16,025	7,876	2,638	178,546
Value of raw materials worked up	£ 1,137,894	£ 1,013,530	280,765	233,494	133,317	33,181	2,832,181
Total value of output ...	£ 2,558,847	£ 2,371,027	749,993	526,453	318,958	89,317	6,614,595
Value added in process of manufacture £	1,420,953	1,357,497	469,168	292,959	185,641	56,136	3,782,354

In addition to engineering works which supply local domestic requirements, there are now a number of large and important establishments which engage in the manufacture of special classes of machinery and implements. The manufacture of mining and smelting machinery and apparatus forms an important section of this industry, and many Australian mines have been locally equipped.

7. **Railway Carriages and Rolling Stock, Railway and Tramway Workshops.**—The railway workshops of Australia form an important item in the metal and machinery class, and are chiefly State institutions. The following table gives the details concerning them, but includes also private establishments manufacturing rolling stock :—

RAILWAY CARRIAGES AND ROLLING STOCK, RAILWAY AND TRAMWAY WORKSHOPS, 1911.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lh.
Number of factories ...	26	15	9	8	7	7	72
employees ...	7,236	4,127	1,941	1,984	1,815	319	17,425
Actual h.p. of engines employed	3,307	1,069	1,449	605	1,875	138	8,373
Approx. value of land and buildings £	840,344	301,765	233,495	236,753	366,761	7,060	2,036,178
Approx. value of plant and machinery £	546,727	214,500	187,322	162,635	249,215	72,791	1,433,093
Total amt. of wages paid during year £	914,234	527,386	202,492	235,117	243,694	40,537	2,163,460
Value of fuel used ...	£ 21,207	£ 17,910	6,564	9,458	13,910	870	69,919
Value of raw material worked up	£ 616,067	£ 736,476	£ 177,194	£ 174,946	£ 210,780	£ 24,014	£ 1,939,477
Total value of output ...	£ 1,690,600	£ 1,391,070	£ 372,942	£ 630,026	£ 477,484	£ 70,444	£ 4,632,566
Value added in process of manufacture £	1,074,533	654,594	195,743	455,080	266,704	46,430	2,693,089

8. **Smelting Works.**—The subjoined table gives particulars of metal smelting, cyanide, pyrites, and metallurgical works. The classification of these works does not appear to be carried out on a uniform basis in the several States, and the combination of industries is, therefore, somewhat unsatisfactory. The returns do not include particulars of plants used on mines.

SMELTING, CYANIDE, PYRITES, Etc., WORKS, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	34	87	11	6	...	5	143
" employees	3,364	640	295	1,413	...	1,324	7,036
Actual horse-power of engines employed	12,682	598	1,135	3,871	...	5,194	23,480
Approx. value of land and buildings £	282,369	16,721	18,036	21,579	...	7,000	343,695
" plant and machinery £	1,428,211	67,934	77,100	71,883	...	255,556	1,900,684
Total am't of wages paid during year £	563,531	46,864	48,330	242,116	...	141,748	1,042,589
Value of fuel used	£ 401,039	5,970	13,043	117,288	...	70,448	607,788
Value of raw material worked up	£4,141,049	88,530	259,111	1,347,590	...	781,390	6,617,670
Total value of output	£6,414,729	188,354	396,291	1,973,073	...	1,136,641	10,109,068
Value added in process of manufacture £	2,273,680	99,524	137,180	625,483	...	355,251	3,491,418

* See third paragraph below.

In New South Wales and Queensland the above figures represent smelting works; those for Victoria include seventy-seven cyanide works, three metallurgical, five pyrites, and two smelting works; South Australia four cyanide and two smelting; and Tasmania three smelting and two pyrites works.

The largest output for the year under review was in New South Wales, viz., £6,414,729, or 63.46 per cent. on the total output for the Commonwealth. South Australia came next with £1,973,073, or 19.52 per cent.; this amount is made up of £1,968,440 smelting and £4633 cyanide. Of the total for Tasmania the output of smelting was £1,043,758, the balance £92,883 representing that obtained from pyrites works. The output in Victoria was £96,440, £10,955, £53,534, and £27,425 from cyanide, metallurgical, pyrites, and smelting works in the order named.

In Western Australia all the plants are worked on the mines and are therefore not collected.

9. **Bacon-curing Factories.**—The following table gives particulars of factories engaged in bacon-curing in each State during the year 1911:—

BACON-CURING FACTORIES, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	21	26	5	11	3	7	73
" employees	181	390	211	86	20	34	912
Actual horse-power of engines employed	279	304	148	61	36	31	859
Approx. value of land and buildings £	58,005	43,925	51,165	9,042	9,410	6,592	178,139
" plant and machinery £	26,222	31,374	16,755	3,978	1,170	3,326	82,825
Total amount of salaries and wages paid £	24,997	39,044	26,489	8,465	3,398	2,305	104,695
Value of fuel used	£ 3,935	4,640	2,180	702	246	417	12,120
Value of raw material worked up	£322,383	460,002	236,000	77,367	70,739	19,047	1,185,538
Total value of output	£383,788	549,748	380,407	95,548	77,847	26,001	1,513,339
Value added in process of manufacture £	61,405	89,746	144,407	18,181	7,108	6,954	327,801

Further information regarding the bacon-curing industry may be found in Section IX., *Farmyard and Dairy Production*.

(i.) *Quantity and Value of Production, 1911.* The following table shows the number of pigs killed and the quantity and value of the production of bacon-curing factories in each State during the year 1911:—

PRODUCTION OF BACON-CURING FACTORIES, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.*	Tasmania.	C'wealth.
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QUANTITY. (,000 omitted).

Bacon & ham lbs.	13,394	15,190	10,726	3,072	...	838	43,220
Lard ... lbs.	691	717	582	131	...	56	2,177

VALUE.

Bacon & ham £	341,300	517,748	338,592	91,021	...	22,365	1,311,026
Lard ... £	13,772	18,000	11,347	2,917	...	1,035	47,061
Other products £	11,465	14,000	30,468	1,610	...	2,671	60,214

PIGS KILLED.

Number ...	148,316	177,029	134,227	33,850	...	12,193	505,615
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* In Western Australia all bacon and hams treated in factories are imported and subsequently smoked in that State.

10. **Butter, Cheese, and Condensed Milk Factories.**—The subjoined table gives particulars of butter, cheese, and condensed milk factories in each State during the year 1911. The returns are exclusive of butterine and margarine factories.

BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ...	180	199	83	46	3	29	540
" employees ...	1,081	1,547	752	208	10	132	3,730
Actual horse-power of engines employed	2,269	2,841	1,116	361	27	204	6,818
Approximate value of land and buildings £	207,331	304,835	103,103	37,249	2,746	21,875	677,139
plant & machinery £	243,580	321,496	158,772	27,272	3,725	20,947	775,792
Total amount of wages paid ...	£ 120,381	147,897	80,945	15,329	1,236	9,433	375,221
Value of fuel used ...	£ 25,427	26,423	12,113	2,531	118	943	67,555
Value of raw material worked up	£ 3,312,978	3,564,977	1,050,000	282,111	8,277	122,582	8,341,125
Total value of output ...	£ 3,607,634	3,964,312	1,363,170	328,269	9,675	159,062	9,432,122
Value added in process of manufacture £	294,656	399,335	312,970	46,158	1,398	36,480	1,090,907

(i.) *Development of Factories, 1907 to 1911.* The following table shews the progress of the factories in this industry from 1907 to 1911 :—

DEVELOPMENT OF BUTTER, Etc., FACTORIES, 1907 to 1911.

State.	Number of Factories.					Number of Persons Employed.					Approximate Value of Plant and Machinery.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
N.S.W.	188	183	181	181	180	1,023	979	1,014	1,046	1,081	£ 244,438	£ 247,678	£ 229,940	£ 231,679	£ 243,580
Vic. ...	223	215	211	203	199	1,449	1,294	1,190	1,261	1,547	311,241	282,012	281,630	280,103	321,496
Q'land.	83	82	80	82	83	1,376	1,238	760	814	752	133,861	145,531	138,049	147,396	158,772
S. Aust.	57	54	53	53	46	213	212	216	232	208	25,224	27,539	29,353	28,620	27,272
W. Aus.	2	2	3	3	3	5	6	10	8	10	2,300	2,300	4,117	4,070	3,725
Tas. ...	23	24	22	26	29	81	95	93	118	132	8,199	11,618	11,040	16,371	20,947
C'w'lth.	576	560	550	548	540	4,147	3,824	3,283	3,479	3,730	725,263	716,678	694,129	708,239	775,792

(ii.) *Quantity and Value of Production, 1911.* The following table shews the quantity and value of butter, cheese, and condensed milk produced, and the quantity of milk used in butter, cheese, and condensed milk factories in each State during 1911 :—

PRODUCTION OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
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QUANTITY (,000 OMITTED).

Butter ... lbs.	78,422	81,267	26,017	6,023	182	3,317	195,228
Cheese ... "	3,486	3,047	3,634	1,521	...	480	12,168
Condensed and concentrated milk ... lbs.	3,058	13,698	6,228	...	...	...	22,984

VALUE (,000 OMITTED).

Butter ... £	3,431	3,622	1,160	288	10	147	8,658
Cheese ... £	85	78	87	40	...	12	302
Condensed and concentrated milk ... £	41	260	116	...	...	...	417

MILK USED (,000 OMITTED).

Butter factories ... gals.	190,250	183,661	54,141	12,643	474	8,294	449,463
Cheese " " "	3,682	3,038	3,686	1,512	...	483	12,401
Condensed " milk factories ... "	859	4,429	1,514	...	...	...	6,802

The butter, cheese and condensed milk industries are dealt with more fully in Section IX., *Farmyard and Dairy Production*.

11. **Meat and Fish Preserving, Ice and Refrigerating Works.**—These industries are now of considerable importance in Australia. The freezing of various kinds of produce for export has long been an established industry. Large freezing works have been installed at many ports in the Commonwealth for the purpose of freezing produce chiefly for export, and insulated space for the carriage of frozen produce is provided by a number of steamship companies trading between Australia and other parts of the world. Particulars regarding the export of frozen beef and mutton may be found on pages 340 and 344 hereof respectively. Special terms have been made by the Commonwealth Government in its English mail contract for the provision by the contractors of ample cold-storage facilities. The export of frozen produce is stated to be capable of considerable expansion. The particulars given in the subjoined table include ice-making and freezing works, and also meat-canning factories, separate particulars for each item for all the States not being available.

MEAT AND FISH-PRESERVING, ICE AND REFRIGERATING WORKS, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ...	96	25	38	12	10	6	197
" employees ...	2,179	1,440	2,110	299	93	25	6,146
Actual horse-power of engines employed	4,391	4,282	4,275	720	714	108	14,490
Approx. value of land and buildings £	479,630	412,742	421,266	153,042	57,230	5,100	1,529,010
" plant and machinery £	514,971	211,791	274,976	84,824	41,025	3,290	1,130,877
Total amount of wages paid during year £	222,631	131,898	217,788	33,812	13,329	2,446	622,104
Value of fuel used ...	37,383	27,428	34,047	5,498	5,598	315	110,269
Value of raw material worked up £	3,546,960	817,029	1,154,000	114,064	1,799	2,161	5,636,913
Total value of output ...	4,198,269	1,087,651	1,574,673	165,347	33,611	6,344	7,045,895
Value added in process of manufacture £	651,309	250,622	420,673	50,383	31,812	4,163	1,408,982

The following table gives particulars, so far as available, of various classes of meat preserved during the year 1911:—

MEAT-PRESERVING WORKS—PARTICULARS OF ANIMALS TREATED, 1911.

Particulars.		N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
Sheep treated	... No.	925,475	1,578,133	303,932	22,000	...	...	2,829,540
Cattle "	... No.	61,596	17,354	200,256	...	...	...	279,206
Pigs "	... No.	...	1,609	1,636	...	...	...	3,245

Large quantities of rabbits, hares, and poultry were treated in freezing works, for which, however, complete returns are not available. Exclusive of Victoria, for which State particulars are not available, the returns shew that 58,433 tons of ice, valued at £121,326, were manufactured in the Commonwealth in 1911.

12. **Biscuit Manufactories.**—The following table gives particulars regarding establishments at which the manufacture of biscuits, cakes, etc., was carried on in each State during the year 1911:—

BISCUIT MANUFACTORIES, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.*	C'w'lth.
Number of factories	6	4	13	3	3	8	37
employees	1,360	1,229	956	122	118	144	3,329
Actual horse-power of engines employed	556	139	101	51	105	62	1,014
Approx. value of land and buildings	£ 95,050	55,390	31,750	15,950	8,672	22,550	229,352
plant and machinery	£ 86,192	46,950	21,471	9,261	12,150	10,283	186,307
Total amount of wages paid during year	£ 70,035	78,330	36,432	10,723	11,397	8,623	215,560
Value of fuel used	£ 7,104	7,798	1,561	1,658	1,316	1,050	20,487
Value of raw material worked up	£ 332,341	281,002	75,903	21,587	44,057	28,392	783,282
Total value of output	£ 529,108	467,114	159,256	51,093	67,390	47,189	1,321,150
Value added in process of manufacture	£ 196,767	186,112	83,333	29,506	23,333	18,797	537,868

* Including confectionery.

13. **Jam and Fruit Preserving, Pickles, Sauces, and Vinegar Manufactories.**—The jam and fruit preserving industry has increased in importance of late years, consequent on the extension of fruit-growing. As an exporting industry it is comparatively young, but is of increasing value, and is stated to be capable of considerable expansion. The subjoined table gives particulars of factories at which these industries were carried on in each State during the year 1911. Separate returns for the individual industries are not available for most of the States.

JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR MANUFACTORIES, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	33	28	8	26	7	18	120
employees	1,155	1,601	201	436	84	875	4,352
Actual horse-power of engines employed	253	396	63	113	51	326	1,202
Approx. value of land and buildings	£ 87,270	110,776	10,886	20,907	8,600	48,200	286,639
plant and machinery	£ 36,585	44,613	5,637	10,610	3,399	22,880	122,724
Total amount of wages paid during year	£ 65,791	99,825	10,392	18,423	6,011	45,847	246,289
Value of fuel used	£ 3,554	7,668	580	2,139	386	2,929	17,256
Value of raw material worked up	£ 326,376	481,324	34,587	105,810	14,747	166,902	1,129,746
Total value of output	£ 477,472	725,311	56,579	151,267	24,874	262,470	1,697,973
Value added in process of manufacture	£ 151,096	243,987	21,992	45,457	10,127	95,568	568,227

(i.) *Quantity and Value of Production, 1911.* The following table shews the quantity and value of jams, pickles, and sauces manufactured in each State during the year 1911:—

QUANTITY AND VALUE OF JAMS, PICKLES, AND SAUCE MANUFACTURED, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
QUANTITY (,000 OMITTED).							
Jam lbs.	25,489	32,093	4,295	6,206	339	14,740	83,162
Pickles ... pints	2,388	1,617	350	325	218	24	4,822
Sauce ... pints	2,048	4,349	201	1,228	448	145	8,419
VALUE.							
Jam £	325,855	555,000	47,932	78,555	5,166	170,373	1,182,881
Pickles ... £	44,738	35,000	5,611	4,874	5,056	517	95,796
Sauce ... £	41,113	90,000	3,598	21,118	8,797	2,404	157,030

14. **Confectionery.**—The following table shews the position of the confectionery industry in 1911, and its growth will be apparent when it is stated that at the close of 1900 there were in New South Wales 16 establishments, with 706 employees, and in Victoria 16 establishments, employing 731 persons, using plant and machinery valued at £2815 in the former and £19,070 in the latter State.

CONFECTIONERY FACTORIES, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.*	C'w'lth.
Number of factories ...	41	31	12	7	4	...	95
employees ...	1,241	1,495	383	251	110	...	3,480
Actual horse-power of engines employed	484	411	64	102	60	...	1,121
Approx. value of land and buildings	£ 181,892	69,507	21,127	32,065	14,640	...	319,231
plant and machinery	£ 64,270	55,320	17,369	24,404	9,770	...	171,133
Total amount of wages paid during year	£ 33,953	95,620	22,574	18,236	8,832	...	229,215
Value of fuel used	£ 3,762	6,688	1,200	2,156	1,036	...	14,842
Value of raw material worked up	£ 338,905	380,686	45,365	52,867	25,694	...	843,517
Total value of output	£ 543,688	554,552	114,701	98,262	40,072	...	1,351,275
Value added in process of manufacture	£ 204,733	173,866	69,336	45,395	14,378	...	507,758

* Included with biscuit factories.

15. **Flour Mills.**—The following table shews the position of the flour-milling industry in year 1911 :—

FLOUR MILLS, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ...	73	61	15	51	16	17	233
employees ...	967	832	241	562	180	133	2,915
Actual horse-power of engines employed	4,670	4,690	946	2,869	1,097	673	14,935
Approx. value of land and buildings	£ 363,680	218,453	67,568	118,373	63,263	49,905	881,242
plant and machinery	£ 940,516	253,513	73,361	144,352	61,425	37,000	909,967
Total am't of wages paid during year	£ 123,491	95,508	23,810	64,539	23,297	13,394	342,034
Value of fuel used	£ 24,648	24,600	3,560	17,395	5,515	2,844	78,562
Value of raw material worked up	£ 2,211,263	2,123,757	305,919	879,686	347,508	209,978	6,078,111
Total value of output	£ 2,538,331	2,456,533	366,871	1,056,979	412,383	251,445	7,082,342
Value added in process of manufacture	£ 327,068	332,776	60,752	177,293	64,875	41,467	1,004,251

(i.) *Production of Flour Mills, 1907 to 1911.* The production of flour by the mills in each State of the Commonwealth in the years 1907 to 1911 was as follows :—

FLOUR MILLS—PRODUCTION, 1907 to 1911.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aust.	Tasmania.	C'wealth.
	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*
1907	237,442	235,185	28,532	105,395	28,353	17,056	651,963
1908	180,843	192,687	22,266	107,742	31,424	17,426	552,888
1909	214,426	215,547	29,451	97,967	24,878	21,419	603,688
1910	242,813	225,282	27,559	95,885	36,818	20,925	649,282
1911	253,556	247,434	27,960	100,374	40,642	21,335	691,301

* Tons of 2000 lbs.

The total production of flour for the Commonwealth for 1911, viz., 691,301 tons, was valued at £5,532,361; in addition 299,657 tons of bran and pollard, valued at £1,430,710, were made. The total quantity of wheat ground in 1911 was 34,489,478 bushels.

16. **Sugar Mills.**—The following table shews the position of the cane-crushing branch of the sugar-making industry in 1911. This industry is carried on in Queensland and New South Wales, the only States of the Commonwealth in which the sugar-cane is grown.

SUGAR MILLS, 1911.

Items.	N.S.W.	Queensland.	Total.
Number of factories	4	49	53
" employees	469	4,295	4,764
Actual horse-power of engines employed ...	3,000	10,255	13,255
Approximate value of land and buildings £	52,480	328,492	380,972
" " plant and machinery £	467,976	1,841,837	2,309,813
Total amount of wages paid during year £	38,004	365,836	403,840
Value of fuel used	8,162	49,249	57,411
Value of raw material worked up ...	107,600	1,107,451	1,215,051
Total value of output	206,277	2,000,232	2,206,509
Value added in course of manufacture £	98,677	892,781	991,458

The product of the sugar mill is raw sugar and molasses, the former being sent to the refineries in different parts of Australia for further treatment. Part of the molasses produced is used in distillation, part is turned into food cake for cattle, and part is used for manuring land, but the greater part produced is put to no use whatever. The following tables shew the progress of this industry in each State from the dates at which information is first obtainable :—

SUGAR MILLS, NEW SOUTH WALES, 1870 to 1911.

Items.	1870.	1877.	1886.	1891.	1896.	1901.	1908.	1909.	1910.	1911.
No. of factories	27	50	64	33	23	12	4	4	4	4
" employees	...	1,065	2,259	1,621	1,475	695	543	529	506	469
Cane crushed tons	...	*	*	*	*	*	144,760	131,083	160,311	167,799
Sugar produced tons	677	7,537	13,750	16,033	28,557	19,519	14,996	14,810	20,115	17,299
Molasses produced gals.	...	345,543	507,000	1,074,080	2,520,580	1,300,909	922,549	1,072,400	918,900	796,440

The reduction in the number of New South Wales mills is due chiefly to the tendency towards concentration of cane-crushing in mills fitted with modern machinery, and the consequent closing of the small home mill. On the north coast of New South Wales some land formerly devoted to sugar-growing has been turned into pastures in connection with the dairying industry.

SUGAR MILLS, QUEENSLAND, 1868 to 1911.

Items.	1868.	1876.	1886.	1891.	1896.	1901.	1908.	1909.	1910.	1911.
No. of factories	10	70	118	68	63	52	51	46	49	49
" employees	...	*	*	*	3,796	*	3,964	3,848	4,036	4,295
" acres crushed	...	7,245	40,756	36,821	66,640	78,160	1,433,315†	1,163,569†	1,840,447†	1,534,451†
Sugar produced tons	...	8,214	59,225	51,219	100,774	120,858	151,098	134,584	210,756	173,296
Molasses produced gals.	68,622	416,415	1,784,266	1,640,662†	2,195,470	3,679,952	5,980,433	4,763,635	7,329,870	6,451,192

* Not available.

† 1890.

‡ Tons of cane crushed.

Information regarding the cultivation of sugar-cane and the bounties payable on cane grown by white labour may be found in the section of this book dealing with *Agricultural Production*. (See pages 392 to 396.)

17. Sugar Refineries.—The establishment of the sugar-refining industry considerably antedates the establishment of the sugar-milling industry, the raw material operated upon being originally brought chiefly from Mauritius and the East. In 1911 there were two sugar refineries in each of the States of Victoria and Queensland, and one in each of the States of New South Wales and South Australia. The returns for the individual States cannot be disclosed.

In the six refineries in the Commonwealth, an average number of 1602 hands was employed during the year 1911. The approximate value of land and buildings was £466,210; of plant and machinery, £847,082; and the total amount of wages paid during the year was £204,306.

As regards production, the amount of crude sugar used was 236,417 tons, and of refined sugar produced 229,593 tons, valued at £3,514,844.

18. Breweries.—Established at an early date in Australia, the main feature of the history of the brewing industry has been the change from the small local brewery in every township of moderate size to the large centralised city brewery. A recent amalgamation in Melbourne resulted in the closing of several large breweries. A workmen's co-operative brewery has been opened in Sydney and a co-operative brewery has been opened in Melbourne by a number of "free" hotelkeepers.

The following table gives particulars of breweries in each State during the year 1911:—

BREWERIES, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
Number of factories ...	37	33	11	14	19	7	121
" employees ...	912	1,031	495	331	522	159	3,450
Actual horse-power of engines employed ...	648	2,358	254	366	1,206	176	5,008
Approx. value of land and buildings ...	307,065	357,952	104,281	111,865	185,236	403,050	1,469,449
Approx. value of plant and machinery ...	281,316	318,072	93,772	73,399	160,951	43,108	970,618
Total amount of wages paid during year ...	120,340	146,388	55,809	47,231	94,114	19,511	483,393
Value of fuel used ...	17,794	23,806	6,228	6,704	13,111	2,141	69,284
Value of raw material worked up ...	494,219	381,032	154,349	89,350	111,708	42,864	1,273,522
Total value of output ...	1,140,151	912,829	425,917	303,297	425,797	110,946	3,318,937
Value added by process of manufacture ...	645,932	531,797	271,568	213,947	314,089	68,082	2,045,415

(i.) *Production and Materials Used, 1911.* The following table shews the quantity and value of ale and stout brewed and the quantity of raw materials used in each State during the year 1911:—

PRODUCTION AND MATERIALS USED IN BREWERIES, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
ALE AND STOUT BREWED.							
Quantity gallons	19,352,995	19,077,420	6,238,721	4,657,055	5,112,958	1,907,114	56,346,263
Value ... £	905,916	900,000	438,597	296,393	414,306	110,946	3,066,158
RAW MATERIALS USED.							
Malt ... bush.	667,457	548,341	208,766	125,006	154,989	68,431	1,772,990
Hops ... lbs.	790,866	649,892	315,632	175,447	236,671	106,496	2,275,004
Sugar ... cwt.	88,435	111,314	52,155	24,058	27,659	8,955	312,586

RAW MATERIALS USED PER 1000 GALLONS OF ALE AND STOUT PRODUCED.

Malt ... bush.	34.49	28.74	33.46	26.84	30.31	35.83	31.47
Hops ... lbs.	40.87	34.07	50.59	37.67	46.29	55.84	40.39
Sugar ... cwt.	4.57	5.83	8.36	5.17	5.41	4.70	5.55

19. **Distilleries.**—The subjoined table gives particulars of distilleries in each State during the year 1911. There are no distilleries in either of the States of Western Australia or Tasmania.

DISTILLERIES, 1911.

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'w'lh.
Number of factories	8	7	4	18	...	...	32
" employees	19	89	40	72	...	...	220
Actual horse-power of engines employed ...	101	175	66	181	...	...	523
Approximate value of land and buildings £	15,999	90,215	9,765	22,522	...	...	138,501
Approx. value of plant and machinery £	42,049	64,950	17,493	20,250	...	...	144,682
Total amount of wages paid during year £	3,331	11,250	3,867	6,225	...	...	24,673
Value of fuel used	945	2,553	2,053	1,919	...	...	7,470
Value of raw materials worked up £	27,743	26,590	8,849	52,114	...	...	115,296
Total value of output	50,062	48,082	67,860	81,179	...	...	246,583
Value added in process of manufacture £	22,319	21,492	58,411	29,065	...	...	131,287

(i.) *Production of Spirits and Materials Used, 1911.* The total quantity of brandy distilled in 1911 was 196,493 proof gallons, and of other spirits was 2,210,029 proof gallons. The materials used comprised 466,628 cwt. of molasses and 2,070,008 gallons of wine. Particulars for the separate States are not available for publication.

20. **Tobacco, Cigars and Cigarettes.**—During the year 1911 there were thirty-three establishments in which the manufacture of tobacco, cigars, and cigarettes was carried on. There were no factories engaged in this industry in Tasmania.

TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1911.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'w'lh.
Number of factories	10	15	3	3	2	...	33
" employees	1,431	2,012	120	146	21	...	3,730
Actual horse-power of engines employed ...	530	465	24	22	5	...	1,046
Approx. value of land and buildings £	183,622	169,066	6,050	12,414	2,743	...	373,895
" plant and machinery £	92,138	103,247	7,573	11,138	480	...	214,576
Total amount of wages paid during year £	131,323	191,533	7,429	14,175	1,798	...	346,258
Value of fuel used	1,067	2,518	252	648	3	...	4,488
Value of raw material worked up £	776,302	633,436	35,078	21,508	1,888	...	1,468,212
Total value of output	1,250,748	1,155,047	63,206	44,975	4,970	...	2,518,946
Value added in process of manufacture £	474,446	521,611	28,128	23,467	3,082	...	1,050,734

(i.) *Quantity of Goods Produced, and Tobacco Leaf Used, 1911.* The following table shows the quantity of goods produced in tobacco factories in each State, and the quantities of imported and Australian-grown leaf used during the year 1911 :—

PRODUCTION OF TOBACCO FACTORIES AND QUANTITY OF LEAF USED, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lh.
QUANTITY (,000 OMITTED).							
Manufactured tobacco lbs.	3,997	5,519	205	325	2	...	10,048
Cigars	88	246	2	14	6	...	356
Cigarettes	No. 8,076	20,879	169	1,159	446	...	30,719
... ..	lbs. 1,899	264	...	...	1	...	2,164
... ..	No. 895,704	113,949	...	...	382	...	950,035

TOBACCO LEAF USED (,000 OMITTED).

Australian leaf... lbs.	745	178	850	118	1	...	1,892
Imported leaf ... lbs.	4,618	4,947	1	194	10	...	9,770

(ii.) *Development of Industry.* This industry was among the first to be established in Australia. In 1861 New South Wales had eleven factories, producing 177,744 lbs. of manufactured tobacco; in the same year there was one factory in Victoria, but the quantity of tobacco manufactured is not available. The Australian market has for many years been largely supplied with local manufactures. The quantities imported into Australia during 1911 were—manufactured tobacco 2,208,908 lbs., cigars 390,320 lbs. and cigarettes 130,925 lbs., while the quantities manufactured in Australian factories were respectively 10,048,396 lbs., 356,127 lbs. and 2,163,729 lbs. The following tables shew the development of the tobacco industry in the several States and the Commonwealth during recent years :—

DEVELOPMENT OF TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1907 to 1911.

State.	Number of Factories.					Number of Persons Employed.					Approximate Value of Plant and Machinery.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
N.S.W.	11	12	15	13	10	1,103	1,309	1,250	1,412	1,431	£ 111,296	£ 119,012	£ 119,676	£ 125,703	£ 92,138
Vic. ...	13	13	14	14	15	2,019	2,542	2,449	2,248	2,012	88,341	100,880	104,973	106,521	103,247
Q'land	2	2	2	2	3	71	79	90	87	120	2,020	2,300	4,350	5,318	7,573
S. Aus.	3	3	3	3	3	174	175	180	154	146	12,716	12,084	12,084	12,101	11,138
W. Aus.	3	3	3	3	2	23	32	22	22	21	265	297	291	708	480
Tas.* ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
C'wlth.	32	33	37	35	33	3,390	4,137	3,991	3,923	3,730	214,638	234,573	241,374	250,351	214,576

PRODUCTION.

State.	Tobacco made.					Cigars made.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
N.S.W.	lbs. 3,899,196	lbs. 3,916,388	lbs. 3,694,918	lbs. 3,850,154	lbs. 3,996,471	lbs. 54,048	lbs. 57,716	lbs. 57,148	lbs. 73,194	lbs. 87,818
Vic. ...	4,781,888	5,330,953	5,160,728	5,507,524	5,519,264	176,704	199,847	210,766	229,315	246,400
Q'land	90,317	152,331	187,059	195,753	204,921	...	...	...	...	1,784
S. Aus.	348,168	434,636	393,913	377,556	325,300	10,956	9,733	10,001	11,594	14,191
W. Aus.	2,005	3,807	3,549	2,100	2,440	6,373	7,527	7,415	5,800	5,934
Tas.* ...	...	...	...	...	...	...	...	...	...	...
C'wlth.	9,121,574	9,838,115	9,440,167	9,933,087	10,048,396	248,061	274,823	285,330	319,903	356,127
State.	Cigarettes made.					Leaf used.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
N.S.W.	lbs. 972,375	lbs. 1,119,269	lbs. 1,300,045	lbs. 1,548,872	lbs. 1,899,462	lbs. 4,304,763	lbs. 4,589,875	lbs. 4,417,173	lbs. 4,945,868	lbs. 5,363,161
Vic. ...	328,448	402,548	323,086	310,711	263,297	4,770,521	5,802,567	4,934,548	5,390,921	5,125,386
Q'land	...	...	...	...	...	120,045	152,188	226,706	255,860	850,481
S. Aus.	1,146	...	...	...	...	341,019	427,588	363,564	346,259	312,038
W. Aus.	340	581	548	2,595	970	10,607	17,591	17,659	10,867	10,690
Tas.* ...	...	...	...	...	...	...	...	...	...	...
C'wlth.	1,302,809	1,522,398	1,623,679	1,862,178	2,163,729	9,546,955	10,989,809	9,959,650	10,950,775	11,661,756

* There are no tobacco factories in Tasmania.

21. **Woollen and Tweed Mills.**—The manufacture of woollens and tweeds was established in Australia at a comparatively early period in its industrial history, the first

record in Victoria dating back to 1867. The following table, which gives particulars of the mills in each State during the year 1911, shews that the industry is now well established :—

WOOLLEN AND TWEED MILLS, 1911.

Items.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	13	10	3	2	...	4	32
" employees	951	1,675	173	169	...	232	3,900
Actual horse-power of engines employed	937	2,108	139	150	...	110	3,444
Approx. value of land and buildings	£ 98,691	144,924	12,100	7,300	...	20,100	283,115
" plant and machinery	£ 122,927	267,932	30,300	18,750	...	38,950	478,859
Total amount of wages paid during year	£ 66,536	107,682	8,794	9,827	...	10,355	203,194
Value of fuel used	£ 4,632	12,647	970	†	...	1,264	19,513†
Value of raw material worked up	£ 143,915	251,365	14,410	†	...	20,034	429,724†
Total value of output	£ 271,465	473,686	34,009	†	...	44,824	823,984†
Value added in process of manufacture	£ 127,550	222,321	19,599	†	...	24,790	394,260†

* Including one cotton ginning establishment. † As there are only two factories in South Australia particulars of output, etc., are not disclosed. ‡ Exclusive of South Australia.

(i.) *Progress of Industry, 1907 to 1911.* The progress of woollen and tweed manufactures during the last five years is shewn in the following table for each State in which mills were in operation :—

DEVELOPMENT OF WOOLLEN MILLS IN AUSTRALIA, 1907 to 1911.

State.	Number of Factories.					Number of Persons Employed.					Approximate Value of Plant and Machinery.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
N.S.W.	5	5	7	8	13	395	455	628	748	951	£ 39,433	£ 43,933	£ 82,117	£ 109,473	£ 122,927
Vic.	9	9	9	9	10	1,589	1,757	1,717	1,657	1,675	259,740	263,100	265,008	247,791	267,932
Q'land.	1	1	*2	*2	*3	119	97	*165	*175	*173	19,364	19,364	*28,634	*30,144	*30,300
S. Aus.	2	2	2	2	2	149	145	177	172	169	13,850	11,200	10,763	10,763	18,750
W Aus.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tas.	4	4	4	4	4	257	263	278	278	232	45,413	33,250	37,250	38,750	38,950
C'wlth.	21	21	24	25	32	2,509	2,717	2,965	3,030	3,200	377,800	370,847	423,772	436,921	478,859

* Including one cotton ginning establishment.

(ii.) *Quantity and Value of Production, 1911.* The production of the woollen mills of Australia consists chiefly of tweed cloths, flannels, and blankets, all of which have acquired a reputation for purity and durability. Detailed particulars for the several States are not available for publication. The total length of tweed and cloth manufactured was over 2,000,000 yards, valued at, approximately, £300,000. In New South Wales 1,054,845 yards of tweed and cloth, in Victoria 901,348 yards, and in Tasmania 24,732 yards were manufactured. The production of flannel in the Commonwealth in 1911 amounted to about 5,000,000 yards, valued at £300,000, and of blankets, shawls, and rugs upwards of 750,000, valued at about £200,000, were manufactured.

No cotton spinning or weaving or linen weaving is carried on in Australia. Cotton ginning has been carried on at periods far apart in the northern States, and a mill was lately reopened at Ipswich in Queensland. For particulars of the quantity ginned on which bounties were paid, see § 17, 1, page 405.

22. Boots and Shoes.—Among the manufactories of Australia the boot and shoe industry holds an important place both in respect to the employment afforded by it and the range of its output. The following table shews particulars of this industry for each State during the year 1911 :—

BOOT AND SHOE FACTORIES, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	106	154	29	26	11	15	341
" employees	4,411	7,001	1,073	802	213	272	13,772
Actual horse-power of engines employed	855	1,063	230	160	30	68	2,406
Approx. value of land and buildings £	230,628	204,002	41,250	60,245	10,190	19,420	565,735
" plant and machinery £	156,643	159,538	33,031	24,858	7,510	8,299	389,879
Total amt. of wages paid during year £	367,605	542,707	78,411	68,727	20,039	19,066	1,096,575
Value of fuel used	£ 5,298	8,936	866	1,217	323	152	16,792
Value of raw material worked up £	709,818	1,103,653	142,205	125,117	41,012	29,296	2,151,101
Total value of output	£ 1,221,748	1,878,308	265,068	225,353	63,414	60,057	3,713,948
Value added in process of manufacture £	511,930	774,655	122,863	100,236	22,402	30,761	1,562,847

(i.) *Progress of Industry, 1907 to 1911.* The progress of the industry in the last five years is shown in the following table :—

DEVELOPMENT OF BOOT AND SHOE FACTORIES, 1907 to 1911.

State.	No. of Factories.					No. of Persons Employed.					Approximate Value of Plant and Machinery.				
	1907	1908	1909	1910	1911	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
N.S.W.	102	105	102	106	106	4,786	4,650	4,460	4,475	4,411	£	£	£	£	£
Victoria	139	139	136	144	154	6,303	6,348	6,894	6,832	7,001	131,884	134,575	141,822	149,228	156,643
Q'land.	32	27	25	30	29	1,134	1,094	1,135	1,120	1,073	22,347	23,204	22,911	23,195	159,538
S. Aust.	21	24	23	23	26	1,162	1,077	1,069	882	802	28,352	30,748	29,644	30,079	24,858
W. Aust.	12	10	11	10	11	249	185	204	203	213	7,232	5,967	6,735	6,100	7,510
Tas. ...	23	23	18	24	15	281	252	261	298	272	4,859	3,185	4,410	4,565	8,299
C'wealth	329	328	315	337	341	13,915	13,606	14,023	13,810	13,772	316,752	324,331	337,734	360,818	389,879

(ii.) *Value and Quantity of Production, 1911.* The number and value of boots and shoes and slippers made at factories in each State during the year 1911 are shewn in the following table :—

PRODUCTION OF BOOT AND SHOE FACTORIES, 1911.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
QUANTITY (,000 OMITTED).							
Boots and shoes ... Pairs	3,729	5,198	779	691	210	180	10,767
Slippers ... Pairs	439	164	60	24	...	3	690
Uppers ... Pairs	70	14	10	19	4	3	120

VALUE.

Boots and shoes ...	£ 1,146,417	1,845,000	249,424	201,642	59,958	56,109	3,558,550
Slippers ...	£ 40,431	25,000	5,141	4,108	...	516	75,196
Uppers ...	£ 14,379	3,000	2,845	5,125	1,445	791	27,585

23. **Hats and Caps.**—The manufacture of hats and caps is now well established in the Commonwealth. The position of the industry in the several States in 1911 is shewn in the following table :—

HAT AND CAP FACTORIES, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
Number of factories	32	43	4	2	1	...	82
" employees	1,566	2,017	142	126	5	...	3,856
Actual horse-power of engines employed	433	415	17	52	...	...	917
Approx. value of land and buildings	£ 112,122	94,912	9,300	4,764	780	...	221,878
" plant and machinery	£ 60,807	51,849	7,330	4,687	100	...	124,773
Total amount of wages paid during year	£ 96,498	141,762	7,614	11,252	298	...	257,424
Value of fuel used	£ 4,376	5,514	206	*	*	...	11,009
Value of raw material worked up	£ 127,494	208,941	11,904	*	*	...	363,806
Total value of output	£ 293,591	420,963	24,220	*	*	...	768,416
Value added in process of manufacture	£ 166,097	212,022	12,316	*	*	...	404,610

* As there are only two factories in South Australia and one in Western Australia, details relating to output, etc., are not available for separate publication; the amounts, however, are included in the totals for the Commonwealth.

(i.) *Progress of Industry, 1907 to 1911.* As appears from the following table, which shows the progress of this industry in the States in which it was carried on during the years 1907 to 1911, there has been a considerable investment of capital in these establishments in New South Wales and Victoria during recent years, and the industry is now in a flourishing condition in both these States.

DEVELOPMENT OF HAT AND CAP FACTORIES, 1907 to 1911.

State.	Number of Factories.					No. of Persons employed.					Approximate Value of Plant and Machinery.				
	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.	1907.	1908.	1909.	1910.	1911.
N.S.W.	22	26	30	29	32	1,094	1,221	1,349	1,398	1,566	£ 35,653	34,315	39,966	52,057	60,807
Vic.	33	34	35	42	43	1,404	1,520	1,688	1,890	2,017	28,452	29,650	35,427	43,447	51,849
Q'land.	3	4	5	5	4	140	129	173	147	142	7,142	7,662	7,420	7,591	7,330
S. Aust.	1	1	2	2	2	60	57	144	166	126	3,180	3,721	5,182	5,064	4,687
W Aust.	...	...	1	1	1	...	...	7	5	5	...	...	50	30	100
C'with.	59	65	73	79	82	2,698	2,927	3,361	3,606	3,856	74,427	75,348	88,045	108,189	124,773

(ii.) *Quantity and Value of Production, 1911.* Particulars regarding the quantity and value of the production of hat and cap factories in each State are not available for separate publication. The total value of hats and caps made in Australia in 1911 was £753,865.

24. **Coach and Wagon Building Works.**—This industry forms the principal branch of manufacture in Class XI. (see § 1, 3 above). The subjoined table gives particulars of factories in this branch of industry in each State during the year 1911. The returns include establishments for the manufacture of wheels, spokes, etc.

COACH AND WAGON BUILDING WORKS, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
Number of factories	254	261	90	102	37	24	768
" employees	2,765	2,872	841	996	371	185	8,030
Actual horse-power of engines employed	776	489	239	339	128	34	2,005
Approx. value of land and buildings	£ 312,112	222,308	61,048	115,457	41,730	19,350	772,003
" plant and machinery	£ 69,068	50,765	25,673	24,801	13,267	2,512	186,896
Total amount of wages paid during year	£ 241,225	211,070	68,031	80,312	44,318	14,117	659,073
Value of fuel used	£ 8,797	8,687	1,233	3,356	2,374	428	24,875
Value of raw material worked up	£ 260,734	247,609	65,705	85,919	46,482	13,515	719,964
Total value of output	£ 626,492	572,850	183,377	215,686	106,736	33,488	1,738,629
Value added in process of manufacture	£ 365,758	325,241	117,672	129,767	60,254	19,973	1,018,665

25. **Furniture and Cabinet Making and Billiard Table Making.**—These industries constitute the principal manufactures in Class XIII. (see § 1, 3 above). The following table gives particulars for 1911:—

FACTORIES FOR FURNITURE AND CABINET MAKING AND BILLIARD TABLE MAKING, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	139	161	61	30	24	11	426
employees	2,561	1,932	996	883	339	207	6,918
Actual horse-power of engines employed	806	448	411	533	205	57	2,460
Approx. value of land and buildings £	249,912	218,465	67,717	45,900	29,810	22,535	634,339
" " plant and machinery £	41,327	28,749	21,957	26,230	7,166	3,139	128,568
Total amount of wages paid during year £	272,011	185,068	84,709	81,461	37,499	12,989	673,737
Value of fuel used	3,879	2,334	1,833	2,357	869	295	11,567
Value of raw material used	£ 269,186	250,905	85,501	73,859	47,158	10,001	736,611
Total value of output	£ 638,855	523,993	218,759	191,378	95,233	32,349	1,700,567
Value added in process of manufacture £	369,669	273,088	133,258	117,519	48,075	22,347	963,956

26. **Electric Light and Power Works.**—Particulars of the electric light and power works of the Commonwealth in the year 1911 are given in the subjoined table. In 1907 there were 128 establishments employing 1569 hands whose salaries and wages amounted to £202,490; in 1911 these had increased to 164 establishments, 2432 hands, salaries and wages £325,049, while the value of plant and machinery had increased during the four years from £2,576,431 to £3,123,062.

ELECTRIC LIGHT AND POWER WORKS, 1911.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	104	20	6	3	20	11	164
employees	929	590	103	300	242	268	2,432
Actual horse-power of engines employed	54,592	15,819	6,083	8,166	18,026	4,534	107,220
Approx. value of land and buildings £	449,300	186,888	29,858	94,568	68,854	13,525	841,993
" " plant and machinery £	1,257,173	733,769	83,261	417,373	492,708	138,778	3,123,062
Total amount of wages paid during year £	134,884	75,722	16,578	32,023	45,067	20,775	325,049
Value of fuel used	£ 183,248	41,881	8,832	19,912	79,812	40,586	374,271
Total value of output	£ 896,607	270,498	63,860	100,629	239,426	92,165	1,663,185

27. **Gas and Coke Works.**—There are gas works in operation in nearly all the chief towns in the Commonwealth. In New South Wales there are thirteen and in Queensland four coke factories which are worked as separate industries. The subjoined table gives particulars of gas and coke works in each State:—

GAS AND COKE WORKS, 1911.

Items.	N.S.W.	Vic.	Q'land	S.A.	W.A.	Tas.	C'wlth.
Number of factories	*60	47	†17	5	4	3	136
employees	1,478	1,601	419	384	102	141	4,125
Actual horse-power of engines employed	2,356	735	126	167	96	24	3,444
Approx. value of land and buildings £	617,625	470,164	131,451	8,446	33,939	31,650	1,293,275
" " plant and machinery £	1,045,624	1,269,343	442,102	350,954	71,859	154,517	3,334,399
Total amount of wages paid during year £	204,066	230,626	53,252	51,173	13,947	17,775	570,868
Value of fuel used	£ 59,634	...	6,073	1,865	2,990	2,637	73,199
Value of raw material used	£ 384,327	235,987	26,153	47,531	12,054	9,346	715,398
Total value of output	£ 1,099,108	810,414	187,665	174,800	46,386	43,959	2,362,332
Value added in process of manufacture £	714,781	574,427	161,512	127,269	34,352	34,613	1,646,934

* Including 13 coke factories. † Including 2 coke factories.

The following table gives particulars regarding the quantity and value of the production of gas and coke works in each State during the year 1911 :—

PRODUCTION OF GAS AND COKE WORKS, 1911.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
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QUANTITY.

Gas made	... 1000 cub. ft.	4,275,039	2,813,160	564,326	500,081	101,616	155,166	8,409,388
Coke	... ... tons	441,415	155,488	35,025	20,125	5,412	7,487	664,932

VALUE.

Gas	... ... £	678,307	710,000	158,259	132,656	33,156	39,167	1,751,545
Coke £	277,554	95,000	21,323	19,992	9,984	5,792	429,645

COAL USED.

Coal tons	*711,536	261,848	65,622	44,842	9,331	12,890	1,106,069
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* Also 55,621 tons shale.

SECTION XIV.

WATER CONSERVATION AND IRRIGATION.

§ 1. Water Supply Works.

1. **General.**—In every country in which droughts are recurrent, there are few problems the solution of which is of greater importance than that of an adequate system of water conservation. Much has been done in the Commonwealth so far as the supply of water to centres of population is concerned, and a description of several of the metropolitan water works will be found herein, viz., in the section dealing with "Local Government."

(i.) *The Great Australian Artesian Basin.* In speaking of the "Great Australian Artesian Basin," the area is understood which includes (a) considerably more than one-half of Queensland, taking in practically all that State lying west of the Great Dividing Range, with the exception of an area in the north-west contiguous to the Northern Territory; (b) a considerable strip of New South Wales along its northern boundary and west of the Great Dividing Range; and (c) the north-eastern part of South Australia proper, together with the extreme south-eastern corner of the Northern Territory. This basin (shewn approximately by map at the end of this section) is said to be the largest yet discovered, and is about 569,000 square miles, of which 376,000 square miles are in Queensland, 90,000 square miles in South Australia, 83,000 square miles in New South Wales, and 20,000 square miles in the Northern Territory. The area of the intake beds is estimated at 60,010 square miles, viz., 50,000 square miles in Queensland and 10,010 square miles in New South Wales. The basin is what is technically known as a one-sided or half-basin, the intake beds outcropping along its eastern and north-eastern sides only, while the remainder of the water-bearing formation is hidden under the superficial deposits forming the plains of the interior of the States. Although it has not been definitely decided whether the basin has an outlet towards the Gulf of Carpentaria in the north, there is a preponderance of opinion and strong evidence in favour of the existence of such an outlet, an opinion which receives strong support from the maps published by the Geological Department of Queensland, which shew an apparent dip in the water-bearing strata towards the Gulf of Carpentaria in the north. The lower cretaceous rocks in which, in the Queensland portion of the basin, the water is contained, have, besides, been proved to extend along the margin of the Gulf of Carpentaria. An extension southwards, whereby the waters of the Great Basin might feed the Murray River Tertiary Basin and flow thence to the South Pacific Ocean, appears, on the other hand, improbable, as there is a bar of palæozoic rocks extending across the valley of the Darling at Wilcannia. The Murray Basin probably extends northwards nearly to the southern boundary of the Great Basin, and it may be fed to some extent by the waters of the Darling which, for a considerable distance, flows over the eocene calcareous sandstone of the Murray Basin.

(ii.) *The Western Australian Basins.* The Western Australian Basins fall naturally within five distinct groups, viz., the Eucla Basin, in the extreme south-east of the State, and extending well into South Australia along the shores of the Great Australian Bight; the Coastal Plain Basin, west of the Darling Range; the North-West Basin, between the Murchison and Ashburton Rivers; the Desert Basin, between the De Grey and Fitzroy Rivers; and the Gulf Basin, between Cambridge Gulf and Queen's Channel.

The Recent and Tertiary strata which enter Western Australia at its eastern border, and which have a prevailing dip towards the Great Australian Bight, form the Eucla artesian water area. But where boring operations have been undertaken the water has been found to be salt or brackish, and there are other conditions affecting the supply, such as local variations in the thickness of the beds, their relative porosity, and the unevenness of the floor upon which they rest, which so far have not been examined with sufficient thoroughness to enable many particulars to be given in regard to this basin.

In the Coastal Plain Basin to the west of the Darling Ranges artesian boring has, on the other hand, been carried on successfully for many years.

(iii.) *The Murray River Basin.* In August, 1910, a report was issued by the Government Geologist of South Australia on the geology of the country south and east of the Murray River, with special reference to subterranean water supply in wells and bores along the Pinnaroo and Bordertown railways. The tertiary formation in the district under consideration occupies the western portion of a vast basin or depression, of which the greater part extends eastward into Victoria and northward into New South Wales. This basin is bounded on the west by the azoic and palæozoic rocks of the Mount Lofty and other ranges, extending northwards from near the mouth of the Murray to the Barrier Ranges, and on the east and north-east by the ranges of Victoria and New South Wales. This tertiary water-basin is occupied by a succession of sedimentary formations, both porous and impervious. It is of interest to note that the waters of the Murray River are partly supplied by influx from the water-bearing beds of this basin; this is proved by the fact that, at low water, springs are observed at certain places flowing into it from beneath the limestone cliffs from Pyap Bend downwards. Similar springs must exist along the courses of other branches of the River Murray system, where they cut through the tertiary formation.

(iv.) *Plutonic or Meteoric Waters.* While it has long been held that the Australian artesian basin is a typically-formed one, and that its intake beds are as described above, a theory has been advanced (viz., by Professor Gregory,¹ formerly of Melbourne, but now of Glasgow University), that the water, although called artesian, is not impounded rain-water, or *meteoric* water at all, but is derived from the older rocks, i.e., that it is *plutonic* in character. If this were so; and if the water contained in the basin were merely such as occurs in the molten lava from volcanoes or imprisoned in the solidified quartz of granites, we should, of course, be rapidly exhausting our supply. He founds his main arguments on (a) the amount of friction caused by the flow of water through the minute interstices between the sand grains, i.e., on the loss of its hydrostatic head before the bores are reached; (b) on anomalies in temperature and pressure; (c) on the chemical analyses of some of the waters; and (d) on evaporation measurements in Central Australia. He suggests the pressure of overlying rock, and gas pressure caused by the internal heat of the earth, as causes of the flow from the bores.

This new theory has been replied to at length by the Government Geologist of New South Wales.² While this Year Book is hardly the place to enter at length upon

1. See J. W. Gregory, F.R.S., D.Sc.: "The Dead Heart of Australia"; London, John Murray, 1906.

2. E. F. Pittman, A.R.S.M., Government Geologist of New South Wales: "Problems of the Artesian Water Supply of Australia, with special reference to Professor Gregory's Theory." (Clarke Memorial Lecture, delivered before the Royal Society of New South Wales, 31st October, 1907).

arguments of a purely scientific nature, it may be said that Mr. Pittman avers that "many of Professor Gregory's statements appear to be in opposition to observed facts." In regard to the loss of hydrostatic head, he quotes the opinion of the United States Geological Survey in regard to bores in Kentucky, and the experience in connection with the Grenelle bore in Paris. So far as temperature is concerned, he shews that it would be illogical to contend that, because some Australian bores give higher rates of increase than the average results of a number of ascertained bores and tunnels in other parts of the world, the water must be plutonic and not meteoric. In regard to pressure, stress is laid on the more accurate results obtained with the dumpy level than with the aneroid, and it is shown how accurately the height to which the water would rise has been predicted in many localities. It is also pointed out that the isopotential lines as laid down are tentative, as information in regard to many private wells is unreliable. The question of the chemical constituents of artesian water is dealt with at length, and it appears that instead of decreasing from east to west, as stated by Professor Gregory, the salinity of the water actually increases, and that some of the wells in the eastern district mentioned by the latter as being particularly rich in saline matter are actually outside the artesian basin altogether.

In regard to evaporation measurements in Central Australia, Mr. Pittman holds that these do not affect the question at issue at all, as the water does not enter the porous beds in Central Australia, but on the flanks of the Dividing Range, where the rainfall is copious. The theories of the pressure of overlying rock and of gas pressure are not accepted by him.

The strength of the argument seems to be unquestionably in favour of the older theory of meteoric water, as upheld by Mr. Pittman. Professor Gregory has made a rejoinder entitled "The Flowing Wells of Central Australia," which appeared in *The Geographical Journal* for July-August, 1911.

(v.) *Particulars of Artesian and Sub-artesian Bores, 1911.* The following table gives particulars of artesian and sub-artesian bores in each State and in the Commonwealth up to the end of the year 1911:—

COMMONWEALTH AND STATES.—PARTICULARS OF ARTESIAN AND SUB-ARTESIAN BORES, 1911.

Particulars.		N.S.W.	Victoria.	Q'land.	S. Aust.†	W. Aust.†	Tas.	C'wlth.
Bores existing ...	No.	457	42	1,879	80	59	...	2,517
Total depth bored ...	feet	749,863	14,962	2,031,100	69,128	68,965	...	2,934,018
Daily flow ...	,000 gals.	66,836†	*	529,818	8,106	19,676	...	624,496
Depth at which artesian water was struck—								
Maximum ...	feet	4,338	558	5,045	4,850	2,275	...	5,045
Minimum ...	feet	46	131	10	233	39	...	10
Temperature of flow—								
Maximum ...	° Fahr.	148	*	202	208	140	...	208
Minimum ...	° Fahr.	70	*	81	82	60	...	60

* Not available. † Government bores only.

2. New South Wales.—Artesian boring in New South Wales dates from 1879, when a private bore was put down on the Kallara pastoral holding, between Bourke and Wilcannia. The first Government bore was that at Goonery, on the Bourke-Wanaaring road, completed in 1884. At the end of 1911, out of 457 known artesian bores in New South Wales, 193 were Government bores.

The distribution of these bores was as follows:—

NEW SOUTH WALES ARTESIAN BORES ON 31st DECEMBER, 1911.

Particulars.				State.	Private.	Total.
Bores existing ...	...	No.	...	193	264	457*
Total depth bored ...	...	feet	...	368,027	381,836	749,863*
Daily flow ...	...	gallons	...	66,835,875†	‡	‡
Depth at which water was struck—						
Maximum ...	...	feet	...	4,338	3,550	...
Minimum ...	...	"	...	89	46	...
Temperature of flow—						
Maximum ...	...	° Fahr.	...	140	148	...
Minimum ...	...	"	...	70	71	...

* Exclusive of 21 Government and 21 private bores which failed; the total depth bored being 27,629 feet and 27,909 feet respectively. † Excluding the flow from seventeen pumping bores, the particulars of which are not available. ‡ Not available.

Of the wells at the end of 1911, the depth is stated in 487 cases, and it appears that only 21 wells were less than 500 feet deep; while 88 ranged from 500 to 1000 feet; 239 from 1000 to 2000 feet; 102 from 2000 to 3000 feet; 32 over 3000 feet; and five over 4000 feet. There is a preponderance of wells from 1000 to 2000 feet in depth, but neither the shallow wells under 500 feet, nor the very deep wells over 3000 feet are so numerous in proportion as in Queensland. The two deepest wells in New South Wales are those at Boronga, in the County of Stapylton, with a depth of 4338 feet and a daily outflow of 1,062,133 gallons; and at Dolgelly, in the Parish of Careunga, in County Stapylton, with a depth of 4086 feet, and an outflow of 622,185 gallons per day. The largest outflow is stated to be that at the Boobora bore, in the County of Stapylton, which yields 1,133,300 gallons a day, and has a depth of 3225 feet.

The Zetz Spa, much used as a mineral water in New South Wales, comes from Ballimore, near Dubbo.

It may be said that the cost of artesian wells works out at an average of about 20s. per lineal foot; it depends, of course, upon the depth to which boring operations have to be extended, and on the accessibility of the bore to a railway station. The practice is to line the bore with three strings of casing, ten, eight and six inches in diameter respectively. The ten and eight inch strings are inserted as far as may be considered necessary, and the six-inch string generally taken to the bottom of the bore. Recent contract prices per lineal foot for a bore complete are as follows:—To 1000 feet, 27s. per foot; 1000 to 1500 feet, 17s. 9d.; 1500 to 2000 feet, 18s. 3d.; 2000 to 2500 feet, 19s. 3d.; 2500 to 3000 feet, 21s. 3d.; 3000 to 3500 feet, 23s. 9d.; 3500 to 4000 feet, 30s. The increased cost per lineal foot for the first 1000 feet is owing to the insertion of the three strings of casing.

3. **Victoria.**—Victoria lies altogether outside the Great Australian Artesian Basin, and as water is obtainable in most parts of the State at shallow depths, there has not been much occasion for artesian boring. As early as 1834, however, an artesian well was bored at Sale, which for a number of years gave a supply of about 100,000 gallons per day until, either through corrosion of the casing or by choking up with sand from below, the flow ceased. In 1905 a new bore was therefore put down, which at a depth of 277 feet yielded sufficient water to fill Lake Guthridge, a local depression. But as the water was impure, and contained too much sulphuretted hydrogen, boring operations were continued to 520 feet, when the lowering of the casing shut off the supply of water. A further bore was then put down at some distance from the first, and this, at a depth of 238 feet, yielded a fresh

and clear water supply, which at present is stated to be about 145,000 gallons per day. Further trouble, however, has been experienced owing to failure of casing and a fresh bore is being put down.

In the late eighties a number of bores were put down in the North-Western part of the State varying from 200 to over 2000 feet in depth, but without any notable success. In 1897 a Board reported on boring for artesian water supply in the Mallee country, but this report was adverse except as regards the extreme northern portion thereof. In 1906 eight bores were put down on the Overnewton Estate, Maribyrnong, to depths varying from 147 to 272 feet; small supplies of good and medium water for stock purposes were obtained, but only one of the wells yielded water fit for domestic purposes. In 1908 boring was commenced in the Mallee country near the Border east of Pinnaroo in South Australia, and a line of bores from the Border to Kow Plains has proved the existence of a large sheet of underground water. Altogether forty-two bores have been sunk, and their depths vary from 150 to 600 feet, the water rising to within from 200 to 7 feet of the surface. In three instances the bores flow, the water rising from four to seventeen feet above the surface. The fresh water extends nearly as far east as the 142nd meridian and its northern limit is approximately the 35th parallel. Information as to the geological formation of this district is given on page 570 preceding.

At the end of 1911 the number of existing Government bores in use in Victoria was 42, from which supplies are obtained by pumping. The total depth bored amounted to 14,962 feet, while the maximum and minimum depths at which water was struck were 588 and 131 feet respectively. There are also seventy-two existing private bores, with a total depth of about 162,000 feet.

4. **Queensland.**—A return relating to the 30th June, 1911, classifies the Queensland artesian bores under the following headings:—

QUEENSLAND ARTESIAN BORES ON 30th JUNE, 1911.

Sunk by—	Artesian Flows.	Sub-Artesian or Pumped Supplies.	In Progress, Abandoned, or Uncertain.	Total
Government	35	36	151	222
Local governing authorities	19	9	18	46
Private owners	731	284	428	1,443
Total	785	329	597	1,711

Of the 785 flowing bores, 57 were of less than 10,000 gallons per day; 161 from 10,001 to 150,000 gallons; 318 from 150,001 to 750,000 gallons; 145 from 750,001 to 1,500,000 gallons; 65 from 1,500,001 to 2,500,000 gallons; and 39 from 2,500,001 to 4,500,000 gallons. The deepest well was one known as Bimerah Run No. 3, White-wood, lying between the Barcoo and Thomson Rivers; this had a depth of 5045 feet, and was stated to yield 70,000 gallons daily. This flow is, of course, a comparatively small one, many wells yielding, when uncontrolled, from one to three million gallons a day. A well at Cunnamulla is stated to have a daily flow, when uncontrolled, of no less than 4,500,000 gallons. The waters of many of the wells have been analysed, and some found suitable for wool-scouring only, others are suitable for watering stock but not for irrigation, owing to the presence of alkali; others again serve for both stock and irrigation, while some, such as those containing sulphuretted hydrogen, are not of any use. Water fit for stock may generally be said to be "safe" for domestic purposes in spite of its slightly mineral taste. The wells yielding the mineral waters known as "Helidon Spa," "Boonah Spa," and "Junot Spa," which are much in use in Queensland and New South Wales, are shallow wells from 60 to 200 feet in depth.

The following table shows particulars as to Queensland bores at the end of June, 1912:—

QUEENSLAND ARTESIAN BORES ON 30th JUNE, 1912.

Particulars.				State and Local Authorities.	Private.	Total.
Bores existing ...	...	No.	...	249	1,630	1,879
Total depth bored ...	...	feet	...	190,852	1,840,248	2,031,100
Daily flow ...	...	gallons	...	32,300,885	497,516,975	529,817,860
Depth at which artesian water was struck—						
Maximum ...	...	feet	...	4,256	5,045	...
Minimum ...	...	...	...	354	10	...
Temperature of flow—						
Maximum ...	...	°Fahr.	...	198	202	...
Minimum ...	...	°Fahr.	...	92	81	...

5. **South Australia.**—The information about artesian wells is somewhat meagre. Early in 1908 a list of twenty-five of the principal Government bores was published, of which four were under 1000 feet in depth, twelve from 1000 to 2000 feet, two from 2000 to 3000 feet, and seven over 3000 feet. The deepest flowing well was at Goyder's Lagoon, on the Hergott to Birdsville route, measuring 4580 feet, and yielding 600,000 gallons per day. A bore at Patchawarra, 35 miles north of Innamincka, was in September, 1909, down to 4863 feet, but had not at that depth struck the subterranean water. The maximum flows, viz., 1,250,000 gallons and 1,000,000 gallons daily, occurred at Coward Springs and Dulkaninna respectively.

The following table shows particulars as to South Australian bores at the end of December, 1911:—

SOUTH AUSTRALIAN BORES, 1911.

Particulars.				Artesian and Sub-artesian.	
Bores existing	...	...	...	...	80
Total depth bored	...	...	...	feet	69,128*
Daily flow	...	...	...	gals.	8,106,000†
Depth at which water was struck—					
Maximum	...	...	...	feet	4,850
Minimum	...	...	...	feet	233
Temperature of flow—					
Maximum	...	...	...	°Fahr.	208
Minimum	...	...	...	°Fahr.	82
Total cost of construction of bores up to end of year	...	...	...	...	£197,680
Expenditure during year on boring operations	...	...	...	...	£15,990

* Exclusive of 44,571 feet in abandoned bores.

† Artesian water only.

(i.) *Bores along Bordertown Railway.* The sinking of bores across the Ninety-mile Desert between the Murray and the Victorian boundary was commenced in 1886 at Coonalpyn; with the exception, however, of salt water at 55 ft., none was reported to have been struck. Ki Ki bore was sunk in 1887, and at 361 ft. a good supply of water fit for stock was struck. Tintinarra bore was sunk in 1887; it was artesian when first tapped. The water was found to be fit for locomotive engines and is still used for that purpose. The bore at Emu Flat was also sunk in 1887.

The following table gives particulars relating to bores along the Bordertown railway. In all these bores water was found in porous beds of Eocene (Tertiary) age.

SOUTH AUSTRALIA.—PARTICULARS OF BORES ALONG BORDERTOWN RAILWAY, 1910.

Bore.	Elevation of Surface above Sea-level.	Depth of Water.	Depth of Water-level from Surface.	Quality; Salts and Matter per Gallon.	Supply per diem.	Remarks.
	Ft.	Ft.	Ft.		Gallons.	
Cooke's Plains	17	15	...	Salt	...	Bottomed granite, 218 feet.
Ki Ki ...	68	{ 73 361 }	68	Brackish	{ 16,800 16,800 }	Bottomed decomposed slates, 450 ft.
Tintinnarra ...	62	251	(Rises to surface).	Fresh (81 grs.)	4,300	...
Emu Flat ...	100	{ 52 166 }	28	Fresh (98 grs.)	8,500	At 60 ft. from surface 312,000 gals. per diem.
Keith ...		{ 264 }				

(ii.) *Bores along and near Pinnaroo Railway Line.* The subjoined table gives particulars of some of the principal bores in the Pinnaroo country. In 1904 the first bore was sunk in this district at Cotton; numerous successful bores have since been put down by the Public Works Department, and subsequently by the residents of the district. Several wells, ranging in depth from 55 ft. to 221 ft., have also been sunk in this district.

SOUTH AUSTRALIA.—PARTICULARS OF PRINCIPAL BORES NEAR PINNAROO RAILWAY LINE, 1910.

Bore.	Elevation of Surface above Sea Level.	Depth of Water.	Depth of Water Level from Surface.	Quality.	Salts per Gallon.	Supply per diem where ascertained.
	Feet.	Feet.	Feet.		Grains.	Gallons.
Sherlock ...	53	270	15	Fresh	196.24	...
Geranium ...	240	140	140	"	96.05	14,400
Cotton ...	300	190 and 800	170	"	81.16	30,000*
Parilla ...	340	207 and 250	207	"	...	...
Bews ...	350	227	193	"	...	10,800
Clay Pan ..	340	225	203	"	...	13,440
Kow Plains...	344	140 and 210	167	"	73.79	...
Fuller* ...	100	72 and 340	43 and 29	{ Brackish Fresh }	{ ... 101 }	{
Gosden ...	100	327	27	Fresh	...	48,000

* Bottomed on granite at 839 feet.

The latest Government bore is situated $7\frac{1}{2}$ miles south of Brown's well, near the terminus of the proposed railway from Tailm Bend. The depth of this bore is 220 ft., and the water, which is in large supply, rises to within 52 ft. of the surface. The water is fresh, containing $\frac{1}{2}$ oz. salts and other solid matter per gallon.

6. *Western Australia.*—(i.) *The Goldfields Water Supply of Western Australia.* The scheme by which the Government of Western Australia undertook to provide a permanent supply of water for the population on the eastern goldfields of that State comes properly under the heading of "Water Supply Works."

The Act under which the works were constructed was introduced in Parliament by Sir John Forrest, G.C.M.G., then Premier of Western Australia, in September, 1896, and provided for an expenditure of £2,500,000 and a daily supply of 5,000,000 gallons. The works, designed by the late Mr. C. Y. O'Connor, Engineer-in-Chief of the State, were originally known as the "Coolgardie Water Scheme," but are now officially called the "Goldfields Water Supply." The first construction work in connection with the scheme was commenced early in 1898, and the water was delivered in Kalgoorlie in January, 1903. The source of supply is the Helena River, in the Darling Ranges, where, at about 18 miles from Perth, an impounding reservoir, 760 acres in extent, with a catchment area of 569 square miles, has been constructed. From the impounding reservoir the water is pumped through a steel main of the locking-bar type, 30 inches in internal diameter, by a series of eight pumping stations located at intervals along the main. Each pumping station, except No. 1, which draws direct from the reservoir, is provided with a suction tank which receives the water pumped by the preceding station. The last pumping station delivers the water into a main service reservoir of 12 million gallons capacity, situated at Bulla Bulla at a height of 1290 feet above the lowest off-take from the Helena Reservoir, and distant $307\frac{1}{2}$ miles therefrom. From the main service reservoir the water flows by gravity to Kalgoorlie, a further distance of 44 miles; the total length of the 30 in. main being $351\frac{1}{2}$ miles. The water is distributed to the various townships and to the mining centres from service reservoirs, and a considerable area of agricultural country is also supplied by branch pipe lines from the main conduit. The area of operations embraces 16,000 square miles, the total length of the water area being approximately 380 miles. The cost of the original works, including expenses of raising loans, was £2,866,454, and of supplementary works £386,247, making a total of £3,252,701. The Mundaring reservoir cost £249,000. Its capacity is 4600 million gallons, and its surface area at full supply level 672 acres. The height of the wall above the river bed is 100 ft.; length of wall, 757 ft.; width of wall at bottom, 85 ft.; at top, 11 ft.; and when the reservoir is full the water runs back for a distance of seven miles. During the financial year 1911-12 the total consumption amounted to 1,135,000,000 gallons, an increase on the previous year of 86,100,000 gallons. The gross revenue was £243,000, and the gross expenditure £270,000. Complete information regarding the financial position of the Goldfields Water Supply was not available at the time of going to press, and will be found in the Appendix.

(ii.) *The Mines Water Supply Branch.*—Prior to the commencement of the Goldfields Water Supply Scheme, works of different kinds were carried out by the Government in order to afford temporary relief to the population on the goldfields. These works comprised shallow and artesian boring, conservation and protection of water in natural and artificial reservoirs, sinking of wells, erection of condensers, etc. About 2000 shallow bores have found fresh water, and a few hundred, salt water, which, however, is serviceable for battery purposes. Administratively, the goldfields area is divided into three water supply districts—Coolgardie, Murchison, and Pilbara. It has been the policy of the department charged with the supervision of water supply works, viz., the Mines Department, to lease watering stations wherever that could be done to advantage, and from twenty to thirty leases are generally executed in the course of a year. The tanks which have been constructed by the department vary in size from 200,000 gallons to 37,500,000 gallons (at Niagara).

At the end of the year 1911 the total number of Government bores west of the Darling Range was 59, and there were 32 private bores recorded in addition. This record is, however, incomplete, and the following particulars refer to Government bores only. The total depth bored is given as 68,965 feet. The total cost of construction of State bores at the end of the year 1911 was about £109,400, of which amount £19,400 was spent in 1911. The total daily flow of the Government bores is stated as 19,676,400

gallons. The maximum and minimum depths of State bores were 2275 feet and 39 feet respectively, and the maximum and minimum temperatures 140° and 60° Fahrenheit. The maximum outflow, 1,167,000 gallons per day, is said to be obtained from a well at Guildford.

As already stated, no artesian water has been found east of the Darling Ranges, although a large number of shallow bores yield either fresh or salt water.

§ 3. Irrigation Plants.

1. **General.**—Various causes have combined to keep proposals for irrigation works on a large scale before the Parliaments of several of the States for a number of years without any very tangible results, except in the case of New South Wales, Victoria, and South Australia. The absence of the example of any country which has constructed such works under similar climatic and labour conditions, the very partial success of some of the smaller works undertaken in Australia, and the abundant supply of artesian water obtained during the last twenty years in parts of the continent most liable to droughts, have all tended to delay the undertaking of large works.

2. **New South Wales.**—(i.) *Irrigation Trusts.* The first action by the Government of this State for the establishment of irrigation settlements was taken under Acts of Parliament which authorised the formation of irrigation trusts in the vicinity of Wentworth in 1890, Hay in 1892, and Balranald in 1893. The Wentworth Trust controlled an area of 10,600 acres, but has been dissolved and its powers assumed by Government. A pumping plant has been provided and channels laid out for the irrigation of an area of 1500 acres, of which 1000 acres are at the present time under successful occupation, largely for the production of horticultural crops and a small amount of lucerne. The original area under the Hay Trust was 12,847 acres, but in 1896 this was reduced to 3000 acres. The pumping plant and channels provide for the irrigation of 900 acres, which are under occupation, principally in connection with the growth of fodder crops for dairying, a small area being under horticultural crops. No works for the supply of water have yet been carried out by the Balranald Trust, which controls an area of 1000 acres. It is improbable that any irrigation will be provided in this area in the near future.

(ii.) *Private Irrigation.* Irrigation by private individuals is almost entirely carried out by pumping plants licensed under the provisions of the Water Rights Act. The largest plants draw their supplies from the River Murray for irrigating areas of from 600 to 700 acres of lucerne grown for stock feeding purposes.

(iii.) *The Murrumbidgee Northern Irrigation Scheme.* This scheme provides for the utilisation of a large proportion of the waters flowing from the Murrumbidgee catchment area in normal seasons. The works which are necessary to provide for the conservation of these waters consist in the first place of a large storage reservoir in which the water is to be retained by a weir known as the "Burrinjuck Dam." This dam is being constructed across the channel of the Murrumbidgee River, about three miles below the confluence of the Goodradigbee River. The catchment area above this point is 5000 square miles.

The retaining wall will have a total height of 240 feet from its crest to the deepest foundation level; the total length will be 784 feet curved in plan to a radius of 1200 feet; the thickness at the crest will be 18 feet and at the base 170 feet. The maximum

depth of the water stored will be 224 feet, the total volume being 33,630 million cubic feet. The wall itself will contain about 600,000 tons of material, and will require about 50,000 tons of cement for its construction. The work is now partially completed and it is estimated that it will be finished in 1913. The object of constructing this weir is to regulate the supply of water, so that the large volumes which are afforded by the winter rains and the melting snows of the spring may be retained and made available to supplement the natural flow of the river in the dry months of the summer, when irrigation water is most required. The volumes of water thus made available for irrigation requirements will be conveyed in the channel of the Murrumbidgee River for a distance of 200 miles from the storage to a point above the town of Narrandera at Berembé, where a reservoir known as the Berembé Weir is in course of construction with the object of diverting supplies by gravitation into the irrigation lands. A main canal, capable of carrying 1005 cubic feet per second, is being constructed from the Berembé weir for the purpose of conveying the waters to the irrigable lands situated along the base of the hills to the west of the town of Narrandera.

It is proposed that the State Government shall acquire and subdivide for the purposes of intense culture the whole of these irrigable areas, which consist of about 200,000 acres of first-class and 360,000 acres of second-class land. The main canal will be capable of carrying to these areas only about one half of the water which will be made available for irrigation by the construction of the Burrinjuck dam. No determination has yet been arrived at as to whether the additional available volumes will be utilised for irrigating further areas of these same lands on the northern side of the river, or whether a separate canal will be constructed for the purpose of carrying supplies to lands on the southern side.

It is stated that the conditions as regards water-supply, soil, and climate are such as to ensure the success of the scheme, and it is anticipated that when the whole of the lands are settled there will be an addition of at least 50,000 people to the population within the district. It is expected that, in addition to the horticultural crops which will be grown, the supplies of fodder which will be afforded by the irrigation settlement will be sufficient to obviate the evil effects of droughts in the surrounding pastoral districts and will thus largely increase their stock-carrying capacity and productiveness.

(iv). *Other Irrigation Schemes.* The following proposals are under investigation by the State Irrigation Department :—

- (a) *Lachlan River.* The construction of a storage reservoir on this river at a place known as Wyangala, below the confluence of the Abercrombie River, for the purpose of affording water in the river channel for pastoral purposes and for the irrigation of small areas along the river banks by pumping.
- (b) *Macquarie River.* The construction of a storage reservoir on this river at Burrendong below the confluence of the Cudgegong River, for the purpose of affording water by gravitation for the irrigation of certain lands to the west of Narromine.
- (c) *Murray River.* The construction of a storage reservoir across the Murray River at Cameroona, above Albury, in order to supply water by gravitation through a canal which will be taken off at Bungowannah, below Albury, for the irrigation of high-class lands lying between the Murray and the Billa-bong Creek near the town of Berrigan.
- (d) *Hunter River.* The construction of storage reservoirs on the Upper Hunter or Goulburn River with a view to supplying water by pumping from the Hunter River to the adjoining lands and supplementing the water supply of Newcastle. It is stated that the valley of this river is one of the most fertile districts in the State and that it is capable of carrying a dense population under the conditions of intense culture by irrigation.

- (e) *Darling River.* The conversion of Lake Menindie into a large permanent storage by means of a diversion weir across the Darling River and of a canal through Lake Pamamaroo, the water so stored to be utilised in the irrigation of the bed of Lake Cawndilla and of certain lands to the south-west.
- (f) *Warragamba River.* A scheme has been prepared for the construction of a large storage dam on the Warragamba River, so as to retain a depth of 225 feet and a volume of 103,000 million gallons of water. This would be available for the supply of 80 million gallons daily for the domestic services of Sydney, 30 million gallons daily for trade purposes, and 80 million gallons daily for irrigation purposes in the county of Cumberland.

It is proposed that the water for domestic purposes should be conveyed and delivered at Potts Hill through 48 miles of open concrete channel and pipes; that the supplies for trade purposes should be delivered in the vicinity of the Great Western Railway, between St. Mary's and Penrith; and that the lands situated along the banks of the Nepean River and in the valley of South Creek should be irrigated.

3. **Victoria.**—(i.) *Classification of Works.* The Water Conservation Works in Victoria naturally divide themselves into those providing mainly a domestic supply, such as the Yan Yean works, controlled by the Melbourne and Metropolitan Board of Works; the Coliban, Broken River, Kerang Lakes, and Mallee Supply Works, which, although now administered by the State Rivers and Water Supply Commission, are properly local government works; other works for domestic supply controlled by Water Works Trusts or Municipal Corporations; and irrigation works proper. With the exception of the last-named class particulars as to these works will be found in the section on "Local Government" of this book.

(ii.) *Works Controlled by the Commission.* With the exception of the First Mildura Irrigation and Water Supply Trust, all of the irrigation schemes and the more important domestic and stock water-supply works in rural districts are vested in and controlled by the State Rivers and Water Supply Commission, which was created by the Water Act 1905, in force since 1st May, 1906. The works under the control of this body, which is composed of three members, may be classified as follows:—(a) Irrigation schemes; and (b) Domestic and stock schemes included in which are a number for providing town supplies, the principal being the Coliban system. The following statement shews the capital cost of each class of works under the control of the commission:—

VICTORIA.—COST OF WORKS VESTED IN, AND UNDER CONTROL OF, STATE RIVERS AND WATER SUPPLY COMMISSION, 1911.

Particulars.	Irrigation Schemes.	Domestic and Stock Schemes including Town Supplies.	Miscellaneous.	Total.
Capital cost ...	£ 2,889,479	1,989,525	66,547	4,945,551

(a) *Irrigation Schemes.* This division comprises the schemes constructed and under construction for the supply of water to between twenty to thirty irrigation districts. Up to 1906 these schemes were controlled by local Trusts which had obtained the moneys for the construction on loans from the State. By the Water Act 1905 all local control was abolished and the districts were transferred to the State Rivers and Water Supply Commission. Since this date the Government has adopted a vigorous irrigation

policy and the expenditure on construction during the past four years amounts to £1,250,000. The irrigation works draw their supplies mainly from headworks constructed on the Murray, Goulburn, and Loddon rivers. The cost of these works, which now stands at £1,097,000, is not debited to the districts benefited, but is borne entirely by the State. Within the last two years the State has adopted the policy of purchasing large areas of land commanded by these schemes and subdividing them for intensive culture. The settlement of the areas on these lines will mean a large increase in the population of the State. The management and supervision of these areas have hitherto been vested in two bodies—the Closer Settlement Board and the Water Supply Commission, but in order to do away with this dual control, the Amending Closer Settlement Act of 1912 was passed, transferring to the Water Supply Commission the entire management, leasing, and general supervision of all lands within irrigation districts.

(b) *Domestic and Stock Schemes.* The second division takes into account the schemes constructed and under construction for the supply of water for domestic and stock purposes to very large tracts of country. The principal works of this division are situated in the Wimmera and Mallee districts, and cover an area of about 6000 square miles. Since its inception, the Commission has spent upon the various works in the Wimmera and Sea Lake district the sum of £176,000, and a further expenditure of £80,000 during the year 1912-13 is contemplated. In addition to the Commission's districts some large areas are still administered by local authorities.

It should be mentioned that in 1899 the State deemed it advisable to write off the sum of £1,073,000 from capital accounts of the local bodies then controlling the works in each of the above divisions.

(iii.) *Mildura.* The first settlement of Mildura dates from 1884. After being managed until 1887 by Chaffey Bros., and then until 1895 by Chaffey Bros. Company Limited, it was in that year taken over by the First Mildura Irrigation Trust and has since then made great progress. Its population, at the Census of 1911, was 6145. For the year ending 30th June, 1911, the receipts of this Trust aggregated £21,316, and its expenditure £18,849. For the same period the area of land under cultivation and the record of water acres were 12,189 and 35,475 acres respectively.

No precise figures are available as to the capital cost of the works at Mildura; probably the sum was not less than £180,000. The amount due to Government is £72,430, exclusive of £15,434 for accumulations of interest.

(iv.) *Lands supplied with water within the State.*—The area of country lands within the State artificially supplied with water for domestic and ordinary use and for watering stock is approximately 20,312 square miles, equal to about 13,000,000 acres. The extent of land under irrigated culture, for all kinds of crop, is 215,333 acres, an increase of 72,476 acres or 50 per cent. over the area irrigated in the previous year. About 14,500 acres have been watered under yearly permits granting authority to divert water from streams throughout the State. Further progress has been made during the year in bringing all such diversions under the control of the Commission, 645 permits authorizing diversions for irrigation, domestic and stock, and power purposes being now in force.

4. *Queensland.*—The main irrigation works in Queensland are as follow:—(a) those at Ayr, which utilise the waters of the Burdekin River, and shallow wells on its banks; (b) those at Bingera, near Bundaberg, which utilise water pumped from the Burnett River just above the point of meeting of the salt and fresh waters, and (c) those at Fairymead, which utilise water pumped from a number of shallow spear wells sunk on the alluvial flats on the north side of the Burnett River and about six miles from Bundaberg. There were 475 irrigators in the State in 1911, chiefly farmers and graziers, and the area irrigated was 8661 acres.

5. **South Australia.**—(i.) *The Renmark Irrigation Trust.* The Renmark Irrigation Trust was established on similar lines to Mildura, but on a considerably smaller scale. At present the extent of the land assessed for the purpose of the trust is approximately 5200 acres, and maintains a population of about 2000. The value of Renmark products averages about £100,000 per annum. It is claimed that without irrigation the land would barely feed 500 sheep.

(ii.) *Other Waterworks.* The Bundaleer reservoir consists of a large earth and clay embankment which impounds water in a natural basin away from the main water-courses. Its capacity is stated at 1,819,000 gallons.

The Barossa waterworks have a reservoir wall of concrete seventy-five feet in height. The reservoir has a holding capacity of 993,840,000 gallons.

A reservoir, the first in the northern part of the State, was completed at the end of 1909 on Pekina Creek, above Orroroo.

The largest of the South Australian undertakings is the Beetaloo waterworks, which supply the towns of Port Pirie, Moonta, Wallaroo, Kadina, and fifteen others, besides one million acres of country lands. The cast-iron reticulation pipes in connection with Beetaloo are 637 miles in length, and the capital cost of the works was £989,950.

None of the South Australian works, Renmark excepted, are, however, irrigation works properly so called, although they are to some extent used for irrigation purposes.

(iii.) *Area under Irrigation.* The area under irrigation in South Australia, including reclaimed lands along the Murray, amounted to only 20,000 acres at the beginning of 1911. The Government, however, proposes to push on with the irrigation schemes along the Murray as fast as possible. The Cobdogla station, held under grazing permits, will be the next area taken in hand, and notice for the resumption of 118 square miles has been given to the present occupiers. The area comprises practically the whole of the original Lake Bonney irrigation scheme, and is contiguous to the Berri irrigation area, which contains a further 19,000 acres of the Cobdogla run. It is proposed to start the reticulation with channels for an area of 5000 acres, between the Cobdogla home-stead and Lake Barmera (formerly Lake Bonney), which lends itself to economical irrigation. A large central pumping station will be erected at the south end of the lake, and will command the whole of the irrigation area, including the 5000 acres, the maximum lift being about 90 feet.

6. **Conflicting Interests.**—The relative rights of the States of New South Wales, Victoria, and South Australia to the waters of the Murray River are undetermined. Territorially the south bank of the Murray was the boundary between the two former States, *i.e.*, the region of the River itself, up to the point where it enters South Australia, was wholly within New South Wales.

At the Federal conventions which preceded the establishment of the Commonwealth the South Australian representatives expressed their fear lest too much irrigation on the Murray and Darling might impair the navigability of the latter river, and the result was the insertion of a provision in the Commonwealth Constitution which reads as follows:—

“*Section 100.*—The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or the residents therein to the reasonable use of the waters of rivers for conservation and irrigation.”

Under this section negotiations have for several years been in progress between the three interested States. In January, 1911, a conference took place in Melbourne between the Premiers of New South Wales, Victoria, and South Australia on the Murray Waters question. One of the primary objects of this conference was to discuss the provision in the Murray Waters Act, passed by the South Australian Government in 1910, authorising the carrying out of certain works at Lake Victoria in New South Wales subject to an agreement being made for the acquisition by South Australia of the lake together with the two watercourses, known as Rufus River and Frenchman's Creek, connecting the River Murray with the lake. The Premier of South Australia claimed the right to have enough water sent down the river to maintain navigation, and also asserted a right to the waters flowing down the Goulburn in Victoria and the Murrumbidgee in New South Wales, into the Murray, as well as to the waters of the Murray itself, not only for navigation, but also for the irrigation purposes contemplated by the Government of South Australia. In support of the navigation proposal it was stated that South Australia had in view a scheme for cutting a canal from the Murray to Victor Harbour, with harbour improvements, etc., which altogether would cost a million sterling. Briefly stated, the results of the conference were that South Australia was to be allowed to carry out storage works at Lake Victoria, New South Wales, and lock her own portion of the Murray at her own expense, but New South Wales and Victoria would not recognise the claims of navigation in any way, and would not bind themselves to deliver any quantity of water at the point of intake into South Australia. No rights to navigation were conceded by New South Wales and Victoria, and the upper portions of the river were left free for irrigation. The storage works which the South Australian Government proposes to construct at Lake Victoria will cost about £162,000, and the total scheme, which will include the construction of at least five locks, will cost between £600,000 and £700,000. It is estimated that as the result of the storage works 22,000,000,000 cubic feet of water can be impounded in Lake Victoria. It is stated that there will be no difficulty in filling the lake in the winter months.

MAP SHEWING THE POSITION AND EXTENT OF THE "AUSTRALIAN
ARTESIAN BASINS."



This map was prepared by the Interstate Conference on Artesian Water, held in Sydney during May, 1912. It contains the latest facts relative to the various artesian basins of the Australian continent. Of these basins the most important is the Great Australian Basin, which is about 569,000 square miles in extent, viz.:—About 376,000 square miles in Queensland, 90,000 square miles in South Australia, 83,000 square miles in New South Wales, and 20,000 square miles in the Northern Territory. The Murray River Basin extends over South-Western New South Wales, North-Western Victoria, and South-Eastern South Australia. The Western Australian Basins fall naturally within five groups, viz.:—The Eucla Basin, the Coastal Plains Basin, the North-West Basin, the Desert Basin, and the Gulf Basin. (See also pages 569 to 577.)

SECTION XV.

COMMERCE.

§ 1. Introductory.

1. **Constitutional Powers of Commonwealth in regard to Commerce.**—Under the provisions of the Commonwealth Constitution Act power to make laws with respect to “trade and commerce with other countries and among the States” is vested in the Commonwealth Parliament, [Chap. I., Part V., sec. 51 (i) *vide* p. 24 of this volume.]

The Constitution Act further provides in relation to trade that:—

“On the establishment of the Commonwealth, the collection and control of duties of customs and of excise, and the control of the payment of bounties, shall pass to the Executive Government of the Commonwealth.” [Section 86.]

“Uniform duties of customs shall be imposed within two years after the establishment of the Commonwealth.” [Section 88.]

“On the imposition of uniform duties of customs the power of the Parliament to impose duties of customs and of excise, and to grant bounties on the production or export of goods, shall become exclusive.

“On the imposition of uniform duties of customs all laws of the several States imposing duties of customs or of excise, or offering bounties on the production or export of goods, shall cease to have effect, but any grant of or agreement for any such bounty lawfully made by or under the authority of the Government of any State shall be taken to be good if made before the thirtieth day of June, one thousand eight hundred and ninety-eight, and not otherwise.” [Section 90.]

“Nothing in this Constitution prohibits a State from granting any aid to or bounty on mining for gold, silver, or other metals, nor from granting, with the consent of both Houses of the Parliament of the Commonwealth expressed by resolution, any aid to or bounty on the production or export of goods.” [Section 91.]

“On the imposition of uniform duties of customs, trade, commerce, and intercourse among the States, whether by means of internal carriage or ocean navigation, shall be absolutely free.” [Section 92, 1st paragraph.]

“The power of the Parliament to make laws with respect to trade and commerce extends to navigation and shipping, and to railways the property of any State.” [Section 98.]

“The Commonwealth shall not, by any law or regulation of trade, commerce, or revenue, give preference to one State or any part thereof over another State or any part thereof.” [Section 99.]

“The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation.” [Section 100.]

"There shall be an Interstate Commission, with such powers of adjudication and administration as the Parliament deems necessary, for the execution and maintenance, within the Commonwealth, of the provisions of this Constitution relating to trade and commerce, and of all laws made thereunder." [Section 101.]

"The Parliament may by any law with respect to trade or commerce forbid, as to railways, any preference or discrimination by any State, or by any authority constituted under a State, if such preference or discrimination is undue and unreasonable or unjust to any State; due regard being had to the financial responsibilities incurred by any State in connection with the construction and maintenance of its railways. But no preference or discrimination shall, within the meaning of this section, be taken to be undue and unreasonable, or unjust to any State, unless so adjudged by the Interstate Commission." [Section 102.]

"The members of the Interstate Commission—

- (i.) Shall be appointed by the Governor-General in Council;
 - (ii.) Shall hold office for seven years, but may be removed within that time by the Governor-General in Council, on an address from both Houses of the Parliament in the same session praying for such removal on the ground of proved misbehaviour or incapacity;
 - (iii.) Shall receive such remuneration as the Parliament may fix; but such remuneration shall not be diminished during their continuance in office."
- [Section 103.]

"Nothing in this Constitution shall render unlawful any rate for the carriage of goods upon a railway, the property of a State, if such rate is deemed by the Interstate Commission to be necessary for the development of the territory of the State, and if the rate applies equally to goods within the State and to goods passing into the State from other States." [Section 104.]

Provisions of a temporary nature and which have now ceased to operate were also made as follows:—

"But notwithstanding anything in this Constitution, goods imported before the imposition of uniform duties of customs into any State, or into any colony which, whilst the goods remain therein, becomes a State, shall, on thence passing into another State within two years after the imposition of such duties, be liable to any duty chargeable on the importation of such goods into the Commonwealth, less any duty paid in respect of the goods on their importation." [Section 92.]

"Notwithstanding anything in this Constitution, the Parliament of the State of Western Australia, if that State be an original State, may, during the first five years after the imposition of uniform duties of customs, impose duties of customs on goods passing into that State and not originally imported from beyond the limits of the Commonwealth; and such duties shall be collected by the Commonwealth.

"But any duty so imposed on any goods shall not exceed during the first of such years the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and shall not exceed during the second, third, fourth, and fifth of such years respectively, four-fifths, three-fifths, two-fifths, and one-fifth of such latter duty, and all duties imposed under this section shall cease at the expiration of the fifth year after the imposition of uniform duties.

"If at any time during the five years the duty on any goods under this section is higher than the duty imposed by the Commonwealth on the importation of the like goods, then such higher duty shall be collected on the goods when imported into Western Australia from beyond the limits of the Commonwealth." [Section 95.]

§ 2. Commonwealth Commercial Legislation.

1. **Customs Act 1901 (No. 6 of 1901).**—"An Act relating to the Customs," assented to on the 3rd October, 1901, came into operation by proclamation on the 4th October, 1901. This provided for the establishment of the necessary administrative machinery for all matters pertaining to the customs, and prescribed, *inter alia*, the manner in which customs duties shall be computed and paid. It does not, however, determine the rates thereof.

During the interval between the inception of the Commonwealth, viz., on 1st January, 1901, and the coming into operation of the Customs Act 1901, the Customs Acts of the several States were administered by the Executive Government of the Commonwealth, under section 86 of the Constitution.

2. **Customs Tariff Act 1902 (No. 14 of 1902).**—The first Commonwealth Customs Tariff imposing uniform rates of customs duty in all the States was introduced in the House of Representatives on the 8th October, 1901. "An Act relating to Duties of Customs," assented to on the 16th September, 1902, made provision that uniform duties of customs specified in the tariff schedule should be imposed from the 8th October, 1901, at four o'clock in the afternoon, reckoned according to the standard time in force in the State of Victoria. From this time onwards trade between the States became free, with, however, the exception, under section 95 of the Constitution Act, of the right of Western Australia to levy duty on the goods from other States. [Repealed by the Customs Tariff Act 1908 (No. 7 of 1908).]

3. **Sea Carriage of Goods Act (No. 14 of 1904).**—"An Act relating to the Sea Carriage of Goods," assented to on the 15th December, 1904, to commence on the 1st January, 1905, provides that—"Where any bill of lading or document contains any clause, covenant or agreement whereby (a) the owner, charterer, master, or agent of any ship or the ship itself, is relieved from the liability for loss or damage to goods arising from the harmful or improper condition of the ship's hold, or any other part of the ship in which goods are carried, or arising from negligence, fault, or failure in the proper loading, stowage, custody, care, or delivery of goods received by them or any of them to be carried in or by the ship; or (b) any obligations of the owner or charterer of any ship to exercise due diligence and to properly man, equip, and supply the ship, to make and keep the ship seaworthy, and to make and keep the ship's hold, refrigerating and cool chambers, and all other parts of the ship in which goods are carried, fit and safe for their reception, carriage, and preservation, are in any wise lessened, weakened, or avoided; or (c) the obligations of the master, officers, agents or servants of any ship to carefully handle and stow goods, and to care for, preserve, and properly deliver them, are in any wise lessened, weakened, or avoided; that clause, covenant, or agreement shall be illegal, null and void, and of no effect.

"In every bill of lading with respect to goods a warranty shall be implied that the ship shall be, at the beginning of the voyage, seaworthy in all respects and properly manned, equipped, and supplied.

"In every bill of lading, with respect to goods, unless the contrary intention appears, a clause shall be implied whereby, if the ship is at the beginning of the voyage seaworthy, in all respects and properly manned, equipped, and supplied, neither the ship nor her owner, master, agent, or charterer shall be responsible for damage to or loss of the goods resulting from (a) faults or errors in navigation; or (b) perils of the sea or navigable waters; or (c) acts of God or the King's enemies; or (d) the inherent defect, quality, or vice of the goods; or (e) the insufficiency of package of the goods; or (f) the seizure of the goods under legal process; or (g) any act of omission of the shipper or owner of the goods, his agent, or representative; or (h) saving or attempting to save life or property at sea; or (i) any deviation in saving or attempting to save life or property at sea."

4. Secret Commission Act 1905 (No. 10 of 1905).—"An Act relating to Secret Commissions, Rebates, and Profits," assented to on the 16th November, 1905, provides that—"Any person who, without the full knowledge and consent of the principals directly or indirectly, (a) being an agent of the principal, accepts or obtains, or agrees or offers to accept or obtain, for any person, for himself, or for any person other than the principal; or (b) gives or agrees to give or offers to the agent of a principal, or to any person at the request of an agent of the principal, any gift or consideration as an inducement or reward for any act done or to be done, or any forbearance observed or to be observed, or any favour or disfavour shewn or to be shewn in relation to the principal's affairs or business or on the principal's behalf, or for obtaining or having obtained, or aiding or having aided to obtain for any person an agency or contract for or with the principal, shall be guilty of an indictable offence.

"Any person who (a) gives to an agent; or (b) being an agent receives or uses, with intent to deceive the principal, any receipt, account, or document in respect of which the principal is interested or in relation to a dealing, transaction, or matter in which the principal is interested, the receipt, account, or document being false, erroneous, or defective in any material particular, or likely in any way to mislead the principal, shall be guilty of an indictable offence.

"Any agent who, without the full knowledge and consent of the principal, buys from or sells to himself, or any firm of which he is a partner, or any company of which he is a director, manager, officer, or employee, or in which he or any person for him or on his behalf is a shareholder, any goods for or on behalf of his principal, shall be guilty of an indictable offence.

"Whoever aids, abets, counsels, or procures, or is in any way directly or indirectly knowingly concerned in or privy to (a) the commission of any offence against this Act; or (b) the commission outside Australia of any act, in relation to the affairs or business or on behalf of a principal residing in Australia, which, if committed in Australia, would be an offence against this Act, shall be deemed to have committed the offence and be punishable accordingly.

"This Act applies to trade and commerce with other countries and among the States, and to agencies of and contracts with the Commonwealth or any department or officer thereof."

5. Commerce (Trade Descriptions) Act 1905 (No. 16 of 1905).—"An Act relating to Commerce with other Countries," assented to on the 8th December, 1905, and brought into operation by proclamation on the 8th June, 1906, gives power to compel the placing of a proper description on certain prescribed goods, or on packages containing the same, being imports or exports of the Commonwealth. In this Act, unless the contrary intention appears, "trade description" in relation to any goods, means any description, statement, indication, or suggestion, direct or indirect, "(a) as to the nature, number, quantity, quality, purity, class, grade, measure, gauge, size, or weight of the goods; or (b) as to the country or place in or at which the goods were made or produced; or (c) as to the manufacturer or producer of the goods or the person by whom they were selected, packed, or in any way prepared for the market; or (d) as to the mode of manufacturing, producing, selecting, packing, or otherwise preparing the goods; or (e) as to the material or ingredients of which the goods are composed, or from what they are derived; or (f) as to the goods being the subject of an existing patent, privilege, or copyright, and includes a customs entry relating to goods; and any mark which, according to the custom of the trade or common repute, is commonly taken to be an indication of any of above matters, shall be deemed to be a trade description within the meaning of this Act.

"'False trade description' means a trade description which, by reason of anything contained therein or omitted therefrom, is false or likely to mislead in a material respect as regards the goods to which it is applied, and includes every alteration of a trade

description, whether by way of addition, effacement, or otherwise, which makes the description false or likely to mislead in a material respect."

The operation of the Act is restricted to the following classes of goods:—(a) Articles used for food or drink by man, or used in the manufacture or preparation of articles used for food or drink by man; or (b) medicines or medicinal preparations for internal or external use; or (c) manures; or (d) apparel (including boots and shoes), and the materials from which such apparel is manufactured; or (e) jewellery; or (f) seeds and plants.

6. Australian Industries Preservation Act 1906 (No. 9 of 1906).—"An Act for the Preservation of Australian Industries and for the repression of Destructive Monopolies," assented to 24th September, 1906, provides that any person or any corporation making or engaging or continuing in any combination "with intent to restrain trade or commerce to the detriment of the public or with intent to destroy or injure by means of unfair competition any Australian industry the preservation of which is advantageous to the Commonwealth, having due regard to the interests of the producers, workers, or consumers," or any person or corporation monopolising or attempting or conspiring to monopolise any part of the trade of the Commonwealth with intent to control, to the detriment of the public, the supply or price of any service, merchandise, or commodity, is guilty of an offence. (Amended, see Acts No. 5 of 1908 and No. 26 of 1909-1910.)

7. Customs Tariff 1906 (No. 14 of 1906).—"An Act relating to Duties of Customs" amends the Customs Tariff of 1902 in relation to the duties on harvesters and agricultural implements and machinery and prescribes the prices to be the maximum prices of Australian harvesters and drills delivered to the purchaser at the railway station or port nearest to the factory where they are made. [Repealed by Customs Tariff Act 1908 (No. 7 of 1908).]

8. Customs Tariff (South African Preference) 1906 (No. 17 of 1906).—"An Act relating to Preferential Duties of Customs on certain goods the produce or manufacture of the British Colonies or Protectorates in South Africa which are included within the South African Customs Union," assented to 12th October, 1906, to operate from 1st October, 1906, provides for special preferential rates of duty on certain goods imported from and being the produce of any of the Colonies or Protectorates included within the South African Customs Union.

9. Australian Industries Preservation Act 1907 (No. 5 of 1908).—"An Act to amend the Australian Industries Preservation Act 1907," assented to 14th April, 1908, provides additional machinery for procuring evidence of offences against the principal Act.

10. Customs Tariff 1908 (No. 7 of 1908).—"An Act relating to Duties of Customs," assented to 3rd June, 1908, repeals Section 5 of the Customs Tariff 1902 (No. 14 of 1902) and the schedule of that Act and the whole of the Customs Tariff 1906 (No. 14 of 1906) as from 8th August, 1907, at 4 o'clock in the afternoon, reckoned according to the standard time in the State of Victoria,¹ and imposes new rates of Customs Duties from that time. This Act provides preference rates of customs duties on certain "goods the produce or manufacture of the United Kingdom which are shipped in the United Kingdom to Australia and not transhipped, or if transhipped then only if it is proved to the satisfaction of the Collector (of Customs) that the goods have not, since they were shipped in the United Kingdom, been subjected to any process of manufacture."

11. Customs Tariff Amendment Act 1908 (No. 13 of 1908).—"An Act to amend the Tariff Act of 1908," assented to 10th June, 1908, provides that where the rate of duty to be paid on goods the produce or manufacture of the United Kingdom is not set out in the Customs Tariff 1908, and where such goods are not expressly declared to be free, the

1. "Standard time" is identical in the States of New South Wales, Victoria, Queensland, and Tasmania.

"General Tariff" rates shall apply. This Act also provides that no higher duty shall be payable under the South African Preference Act 1906, than the duty under the General Tariff of the Customs Tariff 1908, and that no duty shall be payable under that Act on any goods which are free of or exempt from duty under the General Tariff of the Customs Tariff 1908. The purpose of this Act is merely to remove possible doubt as to the intention of the original Acts.

12. Australian Industries Preservation Act 1909 (No. 26 of 1909).—"An Act to amend the Australian Industries Preservation Acts 1906-1907" formally repeals Sections 5 and 8 of the parent Act, which were declared by the High Court to be *ultra vires*; also provides that, in relation to trade and commerce with other countries or among the States, the payment of rebates, or the refusal to sell, "either absolutely or except upon disadvantageous conditions," with the purpose of promoting exclusive dealing, shall be an offence.

13. Customs (Interstate Accounts) Act 1910 (No. 9 of 1910).—Repeals Sections 272 and 273 of the Customs Act 1901. These sections relate to the passing of dutiable goods from one State to another State of the Commonwealth and their repeal was consequent on the termination of the book-keeping system of accounts, between the Commonwealth Government and the Governments of the States, in favour of a system of payments based on population.

14. Australian Industries Preservation Act 1910 (No. 29 of 1910).—"An Act to amend the Australian Industries Preservation Act 1906-1909." This Act removes from the principal Act the obligation to prove *intent* to restrain trade and detriment to the public.

15. Customs Act 1910 (No. 36 of 1910).—"An Act to amend the Customs Act 1901" gives the Customs control of all goods for export, the exportation of which is subject to compliance with any condition or restriction under any Act or regulation, extends the machinery provisions for the prevention of the importation or exportation of goods which are prohibited imports or exports respectively, amends the provisions for the payment of duty under protest, gives the Governor-General power to prescribe the nature, size, and material of the coverings for packages, and the maximum or minimum weight or quantity to be contained in any one package of goods imported or exported, or transported coastwise from one State to another; the condition of preparation or manufacture for export of any articles used for, or in the manufacture of, food or drink by man; the conditions as to purity, soundness, and freedom from disease to be conformed to by the goods for export.

16. Customs Tariff 1910 (No. 39 of 1910).—"An Act relating to Duties of Customs," amends the Customs Tariff of 1908 by more explicit definition of certain tariff items, and by alteration of some rates of duty.

17. Customs Tariff 1911 (No. 19 of 1911).—"An Act relating to Duties of Customs," amends the Customs Tariff of 1908-10 by alteration of some rates of duty.

18. Interstate Commission Act 1912 (No. 33 of 1912).—In accordance with the provisions of the Commonwealth Constitution Act—Sections 101 to 104 (see page 586 *ante*)—an Act relating to the Interstate Commission was assented to on the 24th December, 1912. This Act provides that the Commission, to consist of three members, of whom one shall be of experience in the law, shall be appointed by the Governor-General. The Commission shall be a body corporate, with perpetual succession and a common seal, and capable of suing or being sued." (Sections 4 and 5.)

"The Chief Commissioner shall receive a salary of two thousand five hundred pounds a year, and each of the other Commissioners shall receive a salary of two thousand pounds a year." (Section 7.)

"The Commission shall be charged with the duty of investigating, from time to time, all matters which in the opinion of the Commission ought, in the public interest, to be investigated affecting—(a) the production of and trade in commodities; (b) the encouragement, improvement, and extension of Australian industries and manufactures; (c) markets outside Australia, and the opening up of external trade generally; (d) the effect and operation of any Tariff Act or other legislation of the Commonwealth in regard to revenue, Australian manufactures, and industry and trade generally; (e) prices of commodities; (f) profits of trade and manufactures; (g) wages and social and industrial conditions; (h) labour, employment, and unemployment; (i) bounties paid by foreign countries to encourage shipping or export trade; (j) population; (k) immigration; and (l) other matters referred to the Commission by either House of Parliament, by resolution, for investigation." (Section 16.)

"The Commission may investigate all matters affecting—(a) the extent of diversion or proposed diversions, or works or proposed works for diversions, from any river and its tributaries, and their effect or probable effect on the navigability of rivers that by themselves or by their connection with other waters constitute highways for interstate trade and commerce; (b) the maintenance and the improvement of the navigability of such rivers; (c) the abridgment by the Commonwealth by any law or regulation of trade or commerce of the rights of any State or residents therein to the reasonable use of the waters of rivers for conservation or irrigation; (d) the violation by any State, or by the people of any State, of the rights of any other State, or the people of any other State, with respect to the waters of rivers." (Section 17.)

"All rates fixed or made by any common carrier—(a) for any service rendered in respect of interstate commerce, or (b) which affect interstate commerce, shall be reasonable and just, and every such rate which is unreasonable or unjust is prohibited." (Section 18.)

"It shall not be lawful for any State, or for any State Railway Authority, to give or make upon any railway the property of the State, in respect of interstate commerce, or so as to affect such commerce, any preference or discrimination which is undue or unreasonable, or unjust to any State. In deciding whether a lower charge or difference of treatment constitutes a preference or discrimination which is undue or unreasonable, or unjust to any State, the Commission shall have due regard to the financial responsibilities incurred by any State in connection with the construction and maintenance of its railways." (Section 19.)

"No common carrier or State authority other than a State Railway Authority shall, in respect of interstate commerce or so as to affect such commerce—(a) make or give any undue or unreasonable preference or advantage to any particular person, State, locality, or description of traffic; or (b) subject any particular person, State, locality, or description of traffic to any undue or unreasonable prejudice or disadvantage." (Section 21.)

In moving the second reading of the Bill, the Hon. W. M. Hughes, Attorney-General, gave the following concise statement as to the functions of the Commission:—"It will be a Standing Commission of Inquiry, with power to investigate on reference by Parliament, or of its own motion, practically all matters, knowledge of which is directly necessary to Parliament and the public. It will be a Board of Trade—an independent critic, not only of social, industrial, and commercial events and tendencies, but of the operation and administration of laws. It will be a Board of Advice, to make recommendations and suggestions to Parliament as to amendments of the law. It will be an active guardian of the Constitution, with power to reach out and deal with violations of the Constitution with respect to trade and commerce. It will be a Commerce Court, with power to adjudicate, on complaint by any person interested, or public body, or on a charge made on its own initiative all violations of the trade and commerce law of the Commonwealth. It is vested for its judicial work with the powers of a Court of Record; for its investigating work, with the same powers as are possessed by a Royal Commission." (*Hansard*, Session 1912, page 7070.)

§ 3. Method of Recording Imports and Exports.

1. **Value of Imports.**—The recorded value of goods imported from countries beyond the Commonwealth represents the amount on which duty is payable or would be payable if the duty were charged *ad valorem*. The value of goods is taken to be 10 per cent. in advance of the fair market value in the principal markets of the country whence the goods were exported, the increase being intended to represent roughly the cost plus insurance, freight, and other charges to the place of landing.

2. **Value of Exports.**—The recorded value of goods exported is taken to represent the value in the principal markets of the Commonwealth in the ordinary commercial acceptance of the term.

3. **Records of Past Years.**—In the years preceding federation each State independently recorded its trade, and in so doing did not distinguish other Australian States from foreign countries. As the aggregation of the records of the several States is, necessarily, the only available means of ascertaining the trade of Australia for comparison with later years, it is unfortunate that past records of values and the direction of imports were not on uniform lines admitting of the preparation of a record for Australia as a whole. On the introduction of the Customs Act 1901, the methods of recording values were made uniform throughout the States, but it was not until September, 1903, that a fundamental defect in the system of recording transhipped goods was remedied. Up to this date goods arriving in any Australian port for transshipment to a port in another Australian State were recorded at the latter port only, where they were ordinarily recorded as from the transshipping State, and not as an import from the oversea country.

In recording exports an analogous defect also existed in most of the States, since goods despatched from one Australian State for transshipment in another State to an oversea country were simply recorded in the former as an export to the transshipping State; thus no proper record of the export oversea was made. Owing to this defect the oversea trade prior to September, 1903, is understated by an amount which it is impossible to accurately estimate, since it varies with the development of the shipping facilities of the States concerned. To discover the direction of the transshipping trade is not possible. The figures presented in the tables hereinafter are therefore the values as recorded, and must be taken as subject to the defects explained.

4. **Vessels (Ships) Imported and Exported.**—The imports or exports of vessels were not recorded prior to the year 1905. The value of vessels imported during each of the years 1905-1911 were as follows:—1905, £265,957; 1906, £366,800; 1907, £680,700; 1908, £700,500; 1909, £757,100; 1910, £711,850; 1911, £340,045. The exports during the same years were 1905, £79,975; 1906, £51,365; 1907, £90,201; 1908, £82,355; 1909, £38,600; 1910, £72,000; 1911, £17,605.

5. **Ships' Stores.**—Prior to 1906 goods shipped in Australian ports on board oversea ships as ships' stores were included in the general exports. From 1906 ships stores have been specially recorded as such, and omitted from the return of exports. The value of ships' stores during 1906 amounted to £875,966 (of which bunker coal represented £575,471, or 65.7 per cent.), during 1907 to £998,897 (bunker coal representing £663,724, or 66.45 per cent.), during 1908 to £1,196,106 (bunker coal £867,707, or 72.55 per cent.), during 1909 to £1,071,677 (bunker coal £781,113, or 72.90 per cent.), during 1910 to £1,080,183 (bunker coal £740,567, or 68.57 per cent.), and during 1911 to £1,238,446 (bunker coal £858,783, or 69.35 per cent.).

§ 4. Oversea Trade.

1. **Total Oversea Trade.**—The following table shews the total trade of the Commonwealth with oversea countries from the earliest date for which records are available. In consequence of the defects of record, referred to in the preceding section, the results can be only approximate to the actual figures. The very marked rise and sudden fall in the value of imports during the period 1837 to 1842 were contemporaneous with heavy land speculation and a subsequent severe financial crisis. The great increase of trade in the early fifties is due to the discovery of gold. In the State of Victoria the value of imports from oversea countries increased from £500,000 in 1851 to nearly £11,000,000 in 1853, and to £13,000,000 in 1854; while in New South Wales similar imports rose from £1,390,000 in 1851 to £5,500,000 in 1854, when the total imports into the Commonwealth reached the sum of £34 18s. 10d. per head, and the total trade £56 3s. 10d. per head of the population. The rapid influx of persons anxious to share the good fortunes of these times, however, soon reduced the value of the trade per head, till, in 1858, it had declined to £31 19s. 6d. per head. The period 1867-1872 shews a marked reduction in the value of trade per head. For some years prior to this period New South Wales had experienced a succession of indifferent seasons, and Victoria was suffering from a congested labour market consequent on the decline of alluvial gold-mining in that State. This congestion of the labour market during the years 1862 to 1866 gave rise to the agitation for a protective tariff to provide employment in manufactures, and in April, 1866, the Tariff Act, which expressed the protective policy since adhered to in Victoria, was assented to.

OVERSEA TRADE OF COMMONWEALTH, 1826 to 1912.

Year.	Recorded Value.			Value per Inhabitant.			Percentage of Exports on Imports.
	Imports.	Exports.	Total.	Imports.	Exports.	Total.	
	£1,000.	£1,000.	£1,000.	£ s. d.	£ s. d.	£ s. d.	%
1826	435	131	566	8 3 10	2 9 4	10 13 2	30.1
1827	478	98	576	8 13 10	1 15 8	10 9 6	20.5
1828	735	122	857	12 17 0	2 2 8	14 19 8	16.6
1829	846	218	1,064	14 2 0	3 12 8	17 14 8	25.8
1830	697	194	891	10 11 6	2 18 11	13 10 5	27.8
1831	753	412	1,165	10 6 8	5 13 0	15 19 8	54.7
1832	956	495	1,451	11 19 4	6 3 11	18 3 3	51.8
1833	1,036	500	1,536	11 7 8	5 9 11	16 17 7	43.3
1834	1,373	756	2,129	13 9 10	7 8 6	20 18 4	55.1
1835	1,600	903	2,503	14 12 6	8 5 1	22 17 7	56.4
1836	1,659	985	2,644	13 18 4	8 5 3	22 3 7	59.4
1837	1,510	967	2,477	11 12 10	7 9 1	19 1 11	64.0
1838	2,055	1,054	3,109	14 7 3	7 7 4	21 14 7	51.3
1839	2,578	1,044	3,622	16 0 8	6 9 11	22 10 7	40.5
1840	3,615	1,513	5,128	20 1 6	8 8 1	28 9 7	41.9
1841	3,145	1,335	4,480	15 6 0	6 10 0	21 16 0	42.4
1842	1,742	1,264	3,006	7 10 11	5 9 7	13 0 6	72.6
1843	1,926	1,281	3,207	7 16 7	5 4 2	13 0 9	66.5
1844	1,201	1,291	2,492	4 13 4	5 0 4	9 13 8	107.5
1845	1,518	1,721	3,239	5 11 9	6 6 8	11 18 5	113.4
1846	1,995	1,794	3,789	6 19 5	6 5 5	13 4 10	89.9
1847	2,441	2,200	4,641	8 2 3	7 6 3	15 8 6	90.1
1848	2,000	2,278	4,278	6 4 10	7 2 2	13 7 0	113.9
1849	2,451	2,359	4,810	6 18 11	6 13 9	13 12 8	96.2
1850	3,009	2,688	5,697	7 14 8	6 18 1	14 12 9	89.3
1851	2,962	2,708	5,670	7 0 7	6 8 7	13 9 2	91.4
1852	4,798	10,896	15,694	10 1 9	22 18 3	33 0 0	227.0

1. Reckoned on mean population of the year.

OVERSEA TRADE OF COMMONWEALTH, 1826 TO 1912.—Continued.

Year	Recorded Value. 1			Value per Inhabitant. 1			Percentage of Exports on Imports.
	Imports.	Exports.	Total.	Imports.	Exports.	Total.	
	£1,000.	£1,000.	£1,000.	£ s. d.	£ s. d.	£ s. d.	%
1853	14,990	14,403	29,393	26 17 11	25 16 10	52 14 9	96.1
1854	22,478	13,928	36,406	34 13 10	21 10 0	56 3 10	62.0
1855	14,428	15,184	29,562	19 7 11	20 6 11	39 14 10	105.0
1856	16,631	16,234	32,865	19 18 4	19 8 9	39 7 1	97.6
1857	18,872	16,127	34,999	20 9 0	17 9 5	37 18 5	85.5
1858	17,668	14,625	32,293	17 9 11	14 9 7	31 19 6	82.8
1859	20,376	17,027	37,403	18 19 6	15 17 1	34 16 7	83.6
1860	20,586	16,081	36,617	18 6 5	14 6 11	32 18 4	78.3
1861	17,651	17,413	35,064	15 5 2	15 1 1	30 6 3	98.7
1862	20,599	18,065	38,664	17 7 1	15 4 5	32 11 6	87.7
1863	21,248	19,336	40,584	17 4 7	15 13 7	32 18 2	91.0
1864	20,503	18,977	39,480	15 17 4	14 13 6	30 10 10	92.6
1865	20,660	19,706	40,366	15 4 4	14 10 4	29 14 8	95.4
1866	21,311	18,972	40,283	15 0 10	13 7 10	28 8 8	89.0
1867	15,964	18,384	34,348	10 18 1	12 11 2	23 9 3	115.2
1868	18,436	21,650	40,086	12 3 11	14 6 6	26 10 5	117.4
1869	19,910	20,066	39,976	12 14 4	12 16 4	25 10 8	103.8
1870	17,833	18,012	35,845	11 0 2	11 2 5	22 2 7	101.0
1871	17,017	21,725	38,742	10 3 3	12 19 6	23 2 9	127.7
1872	18,833	22,518	41,351	10 18 9	13 1 7	24 0 4	119.6
1873	24,567	26,370	50,937	13 17 10	14 18 2	28 16 0	107.4
1874	24,554	25,646	50,200	13 9 9	14 1 8	27 11 5	104.5
1875	24,939	24,978	49,917	13 6 2	13 6 7	26 12 9	100.1
1876	23,968	23,540	47,508	12 8 7	12 4 2	24 12 9	98.2
1877	25,797	23,107	48,904	12 18 8	11 11 8	24 10 4	89.6
1878	26,181	23,773	49,954	12 14 0	11 10 8	24 4 8	90.8
1879	24,233	21,184	45,417	11 7 10	9 19 2	21 7 0	87.4
1880	22,939	27,255	50,194	10 8 10	12 8 1	22 16 11	118.8
1881	29,067	27,528	56,595	12 16 2	12 2 8	24 18 10	94.7
1882	36,103	27,313	63,416	15 7 7	11 12 9	27 0 4	75.6
1883	35,454	30,058	65,512	14 9 9	12 5 8	26 15 5	84.8
1884	36,988	28,708	65,696	14 9 6	11 4 8	25 14 2	77.6
1885	36,862	26,667	63,529	13 18 2	10 1 3	23 19 5	72.3
1886	34,179	21,700	55,879	12 9 4	7 18 4	20 7 8	63.5
1887	29,572	23,421	52,993	10 8 8	8 5 3	18 13 11	79.2
1888	36,881	28,900	65,781	12 11 7	9 17 2	22 8 9	78.4
1889	37,577	29,553	67,130	12 8 8	9 15 7	22 4 3	78.6
1890	35,168	29,321	64,489	11 6 4	9 8 9	20 15 1	83.4
1891	37,711	36,043	73,754	11 16 0	11 5 6	23 1 6	95.6
1892	30,107	33,370	63,477	9 4 0	10 3 10	19 7 10	110.8
1893	23,765	33,225	56,990	7 2 7	9 19 4	17 1 11	139.8
1894	21,897	32,131	54,028	6 9 0	9 9 4	15 18 4	146.7
1895	23,195	33,644	56,839	6 14 1	9 14 6	16 8 7	145.0
1896	29,658	32,964	62,622	8 8 5	9 7 2	17 15 7	111.1
1897	31,958	37,783	69,741	8 18 3	10 10 9	19 9 0	118.2
1898	31,481	40,165	71,646	8 12 11	11 0 7	19 13 6	127.6
1899	34,380	48,599	82,929	9 6 0	13 3 5	22 9 5	141.6
1900	41,388	45,957	87,345	11 1 3	12 5 9	23 7 0	111.0
1901	42,434	49,696	92,130	11 3 11	13 2 2	24 6 1	117.1
1902	40,676	43,915	84,591	10 11 4	11 8 3	21 19 7	108.0
1903	37,811	48,250	86,061	9 14 3	12 7 10	22 2 1	127.6
1904	37,021	57,486	94,507	9 7 9	14 11 7	23 19 4	155.3
1905	38,347	56,841	95,188	9 11 9	14 4 1	23 15 10	148.2
1906	44,745	69,738	114,483	11 0 4	17 3 6	28 3 10	155.9
1907	51,809	72,824	124,633	12 11 3	17 13 2	30 4 5	140.6
1908	49,799	64,311	114,110	11 17 5	15 6 8	27 4 1	129.1
1909	51,172	65,319	116,491	11 19 5	15 5 7	27 5 0	127.6
1910	60,014	74,491	134,505	13 14 8	17 0 10	30 15 6	124.1
1911	66,968	79,482	146,450	14 18 3	17 14 0	32 12 3	118.7
1912 ²	78,165	79,093	157,258	16 16 7	17 0 7	33 17 2	101.2

1. Reckoned on mean population of the year. 2. Preliminary figures.

The graphs illustrating the movement of the oversea trade of Australia (see pages 617 and 618) show that periods of depressed trade have been recurrent at more or less regular intervals of from seven to nine years, and measured by population, each succeeding depression since 1855 has carried the trade per head lower than the preceding one, until the lowest point was reached in 1894.

The year 1892 marked the beginning of a period of acute financial stress, culminating in the commercial crisis of 1893. The collapse of these years is plainly reflected in the trade records of that period, the trade of 1894 falling to £54,028,227, a decline of no less than 26.75 per cent. in three years. In 1895 there was a slight recovery, and a continuous upward movement until 1901, when the trade reached £92,130,183, or £24 6s. 1d. per head. A decline, due to drought, in the exports of agricultural, pastoral, and dairy produce, reduced the trade of 1902 to £84,591,037, but although in the next year there was a further shrinkage in the exports of agricultural produce, the increase in the value of the exports of metals, specie, butter, and wool was so large as to effect an increase in the total trade. From 1902 the increase in the value of trade continued, till in 1907 it reached the amount of £124,633,280, equal to £30 4s. 5d. per inhabitant.

The imports during 1907 were, doubtless, to some extent inflated by the importation of goods in anticipation of the tariff revision of that year. The trade of 1908 shows a decline of £10,523,000 as compared with 1907, of which £8,513,000 was in the value of exports, notwithstanding an increase of £3,447,767 in the export of gold and specie. This decline in the value of exports was largely due to reduced prices ruling for wool and metals in consequence of the financial crisis in the United States during the previous year, and in lesser degree to the smaller exports of agricultural and pastoral produce, due to the unfavourable season experienced in some of the States.

The trade of 1909 per head of population was slightly more than in 1908, notwithstanding that the gold exports were less by £5,193,587. In 1910 the trade reached an absolute amount never before attained, while, measured by the population, the value of imports per head was higher than in any year since 1885, and the value of exports was—excepting the years 1906 and 1907—the highest since 1857. The high value of exports is particularly striking when considered in conjunction with the exceptionally small exports of gold. The exports of gold, already much reduced in 1909 as compared with 1908, were in 1910 still further reduced by £4,264,368 to £4,108,783, the smallest recorded since 1892. These relatively small exports of gold do not indicate the decline of the gold production, but are merely due to the fact that the recent prolific seasons and high prices made the exports of merchandise sufficient to meet all obligations abroad and so render the export of gold unnecessary. During 1911 the exports of gold bullion and specie again increased to £11,540,782. The continued increase in the value of imports during 1912, while the value of exports remained stationary, is largely due to increased loan flotations in London, and also in some degree to the larger introductions of capital by immigrants. The particular classes of goods from which the increases in trade arise are shewn on pages 613 to 615.

2. Ratio between Exports and Imports.—The foregoing table shows the percentage of exports on imports for each year. From this it will be seen that, with few exceptions, due to temporary dislocations of trade, prior to 1892 the balance of trade has been on the side of imports, but from 1891 the reverse has been the case, the value of exports having increased by 120.5 per cent. and the imports by 77.6 per cent. The excess of imports in the earlier years represents the introduction of capital in the form of Government loans and for investment in private undertakings, and the excess of exports in the later years represents mainly the interest and profit on the earlier investments, repayment of loans to foreign bondholders, and also freight on trade which is carried mainly by ships of the United Kingdom and foreign countries.

§ 5. Direction of Trade.

1. Country of Shipment and Country of Origin.—From the 1st January, 1905, the Trade and Customs Department, in addition to the usual record of the countries whence goods directly arrived in Australia, has kept a record of the countries of their origin

The following table shows, for the years 1908 and 1911, the value of imports recorded as direct from the principal countries, and also the disposition of the value of imports against the countries where they were produced or manufactured. A similar comparison for the years 1905, 1906, 1907, 1909, and 1910 will be found in previous issues of this work.

CO-11 ONWEALTH IMPORTS FROM COUNTRIES OF SHIPMENT AND COUNTRIES OF ORIGIN, 1908 and 1911.

Country.	Imports according to—							
	Country of Shipment.				Country of Origin.			
	1908.		1911.		1908.		1911.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
United Kingdom ...	£ 29,930,157	60.10	£ 39,499,011	58.98	£ 25,274,661	50.75	£ 32,735,971	48.88
BRITISH POSSESSIONS—								
Canada ...	321,041	0.64	884,889	1.32	532,752	1.07	844,235	1.26
Ceylon ...	683,813	1.37	738,556	1.10	681,950	1.37	728,969	1.09
Hong Kong ...	247,689	0.50	302,762	0.45	7,321	0.01	3,260	0.00
India ...	1,630,246	3.28	2,122,260	3.17	1,658,140	3.33	2,222,953	3.32
New Zealand ...	2,276,597	4.57	2,974,215	4.44	2,196,433	4.41	2,810,163	4.20
Straits Settlements ...	384,567	0.77	611,202	0.96	158,603	0.32	189,343	0.28
Other British Possessions ...	845,671	1.70	948,558	1.42	994,755	2.00	1,134,322	1.70
Total British Possessions ...	6,389,624	12.83	8,612,442	12.86	6,229,954	12.51	7,933,245	11.85
Total British Countries ...	36,319,781	72.93	48,111,453	71.84	31,504,615	63.26	40,669,216	60.73
FOREIGN COUNTRIES—								
Austria-Hungary ...	16,947	0.03	4,308	0.01	265,345	0.53	340,541	0.51
Belgium ...	970,187	1.95	2,007,557	3.00	636,450	1.28	1,141,075	1.70
China ...	69,362	0.14	102,757	0.15	315,887	0.63	448,881	0.67
France ...	479,642	0.97	614,045	0.92	1,775,389	3.56	2,269,892	3.39
Germany ...	3,509,120	7.05	4,437,153	6.63	4,482,394	9.00	6,373,298	9.52
Japan ...	543,789	1.09	832,757	1.24	574,906	1.15	856,382	1.28
Netherlands ...	173,528	0.35	278,085	0.42	311,892	0.63	485,512	0.72
Norway ...	314,685	0.63	662,851	0.99	420,470	0.85	787,322	1.18
Spain ...	12,131	0.02	40,059	0.06	108,104	0.22	146,287	0.22
Sweden ...	206,614	0.41	538,852	0.80	348,666	0.70	689,473	1.03
Switzerland ...	38,498	0.08	18,369	0.03	754,110	1.51	1,076,675	1.61
United States ...	6,039,753	12.13	7,747,991	11.57	6,581,846	13.22	9,007,657	13.45
Other Foreign Countries ...	1,105,236	2.22	1,571,251	2.34	1,719,259	3.46	2,675,177	3.99
Total Foreign Countries ...	13,479,492	27.07	18,856,035	28.16	18,294,658	36.74	26,298,272	39.27
Total Imports from all Countries ...	49,799,273	100	66,967,488	100	49,799,273	100	66,967,488	100

The only country from which the value of direct imports exceeds by any large amount the value of the imports of goods which were manufactured or produced therein, that is to say, the only country which shews a balance of any magnitude as a distributor of the goods of other countries to Australia, is the United Kingdom. The records of our imports therefrom during the year 1911 shew that while the total direct imports from that country amounted to £39,499,011, the value of the manufactures or produce of the United Kingdom itself, imported from all countries whatsoever during the same year, was £32,735,971. From the foregoing figures it appears that goods to the value of at least £6,763,040 were received from other countries through the United Kingdom.

Other countries which shew balances as distributors to Australia, though absolutely of much less amount, are Belgium, Hong Kong, New Zealand, Straits Settlements, and Ceylon. The countries mentioned are, of course, not the only countries through which goods are indirectly imported into Australia, for the direct imports from other countries, notably France and Germany, include considerable values which are not of the produce of those countries. These values, however, are more than balanced by value of French and German goods received through the United Kingdom and other countries.

2. **Direct Imports according to Country of Shipment.**—The following table, shewing the average yearly value of imports from each of the principal countries during each succeeding quinquennial period from 1891 to 1910, and for the year 1911, shews considerable change in direction of imports during the past twenty years. The countries mentioned in this table are those where the goods were shipped or whence they were directly consigned to Australia.

TRADE OF THE COMMONWEALTH WITH VARIOUS COUNTRIES, 1891 to 1911.

Country	Yearly Average of Quinquennial Periods.				Year 1911.
	1891-5.	1896-1900.	1901-5.	1906-10.	
	£	£	£	£	£
United Kingdom ...	19,481,623	21,797,837	22,895,869	31,246,141	39,499,011
British Possessions—					
Canada ...	97,060	187,060	296,660	433,777	884,889
Ceylon ...	217,138	369,841	574,758	712,684	738,556
Fiji ...	106,838	111,674	77,468	175,684	491,723
Hong Kong ...	519,899	322,937	314,262	245,010	302,762
India ...	653,951	795,842	1,067,346	2,009,266	2,122,260
Mauritius ...	198,436	207,378	117,696	44,808	26,951
New Zealand ...	1,219,745	1,417,587	2,210,938	2,483,494	2,974,215
Papua ...	10,296	42,978	72,446	67,254	80,020
South African Union ...	16,069	2,974	7,544	84,211	76,784
Straits Settlements ...	126,703	263,960	188,972	407,755	641,202
Other British Possessions	10,479	25,080	77,196	254,672	273,080
Total British Possessions ...	3,176,614	3,747,811	5,005,286	6,918,615	8,612,442
Total British Countries ...	22,658,237	25,545,148	27,901,155	38,164,756	48,111,453
Foreign Countries—					
Argentine Republic ...	92	3,279	229,727	163	16
Belgium ...	280,800	337,712	491,484	1,018,306	2,007,557
Chile and Peru ...	20,225	14,888	26,710	30,408	23,834
China ...	406,841	286,642	155,449	66,470	102,757
France ...	193,501	453,958	465,616	468,069	614,045
Germany ...	1,134,006	2,009,794	2,622,715	3,475,005	4,437,153
Hawaiian Islands, New Britain, New Caledonia, New Hebrides, and South Sea Islands ...	73,385	153,874	122,929	204,392	216,813
Italy ...	60,682	123,097	164,241	235,356	312,172
Japan ...	54,559	186,656	353,114	565,931	832,757
Java ...	541,511	325,600	598,667	526,556	548,849
Netherlands ...	12,821	26,960	82,418	166,749	278,085
Norway ...	187,232	236,665	323,264	387,535	662,851
Philippine Islands ...	12,777	54,731	71,953	93,223	107,454
Sweden ...	26,601	79,155	79,383	219,462	538,852
United States of America	1,624,575	3,754,074	5,258,527	5,608,073	7,747,991
Other Foreign Countries	47,793	170,804	310,449	277,439	429,849
Total Foreign Countries ...	4,676,901	8,217,889	11,956,646	13,943,137	18,856,035
Total ...	27,335,138	33,763,037	39,257,801	51,507,893	66,967,488

Expressing each item as percentage on the total of the imports, the following results are obtained :—

COMMONWEALTH IMPORTS.—PERCENTAGES OF THE IMPORTS FROM EACH COUNTRY ON THE TOTAL IMPORTS, 1891 to 1911.

Country.	1891-5.	1896-1900.	1901-5.	1906-10.	1911.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom ...	71.26	64.56	58.33	60.67	58.98
BRITISH POSSESSIONS—					
Canada ...	0.35	0.55	0.76	0.84	1.32
Ceylon ...	0.79	1.10	1.46	1.89	1.10
Fiji ...	0.39	0.33	0.20	0.34	0.73
Hong Kong ...	1.90	0.96	0.80	0.48	0.45
India ...	2.39	2.36	2.72	3.90	3.17
Mauritius ...	0.73	0.61	0.30	0.09	0.04
New Zealand ...	4.47	4.20	5.63	4.82	4.44
Papua ...	0.04	0.13	0.18	0.13	0.12
South African Union ...	0.06	0.01	0.02	0.16	0.12
Straits Settlements...	0.46	0.78	0.48	0.79	0.96
Other British Possessions ...	0.04	0.07	0.20	0.49	0.41
Total British Possessions ...	11.62	11.10	12.75	13.43	12.86
Total British Countries ...	82.88	75.66	71.08	74.10	71.84
FOREIGN COUNTRIES—					
Argentine Republic...	0.00	0.01	0.59	0.00	0.00
Belgium ...	1.03	1.00	1.25	1.97	3.00
Chile and Peru ...	0.07	0.04	0.07	0.06	0.04
China ...	1.49	0.85	0.40	0.13	0.15
France ...	0.71	1.35	1.19	0.91	0.92
Germany ...	4.15	5.95	6.68	6.75	6.63
Hawaiian Islands, New Britain, New Caledonia, New Hebrides and South Sea Islands ...	0.27	0.46	0.31	0.39	0.32
Italy ...	0.22	0.36	0.42	0.46	0.47
Japan ...	0.20	0.55	0.90	1.10	1.24
Java ...	1.99	0.96	1.52	1.02	0.81
Netherlands ...	0.05	0.08	0.21	0.32	0.42
Norway ...	0.68	0.70	0.82	0.75	0.99
Philippine Islands ...	0.05	0.16	0.18	0.18	0.16
Sweden ...	0.09	0.24	0.20	0.42	0.80
United States of America ...	5.95	11.12	13.39	10.90	11.57
Other Foreign Countries ...	0.17	0.51	0.79	0.54	0.64
Total Foreign Countries...	17.12	24.34	28.92	25.90	28.16
Total ...	100	100	100	100	100

3. Imports from the United Kingdom.—The foregoing tables shew that while the actual value of direct imports from the United Kingdom during 1911 is above the yearly average of the period under review, being double that of the quinquennium 1891-5, the proportion to total imports has diminished, having fallen from 71.26 per cent. during the years 1891-5 to 58.98 per cent. in 1911. The position of the United Kingdom as

indicated by her percentage proportion of the total trade is largely affected by the imports of vegetable foodstuffs, a branch of trade in which the United Kingdom cannot participate. The apparent diversion of Australian trade from Great Britain is more fully dealt with in sub-section 11 of this chapter. The values of the principal imports of United Kingdom origin during the year 1911 are as follows:—

Ale and beer, £384,493; apparel and textiles—apparel, £2,575,441, textiles, £8,654,324; arms, ammunition and explosives, £644,530; books and periodicals, £616,657; brushware, £80,859; earthenware, etc., £305,698; clocks and watches, £44,878; cocoa and chocolate, £120,880; confectionery, £286,178; cordage, metal, £93,290; cordage, other, £128,453; cutlery, £208,253; drugs and chemicals—alkalies (soda), £102,445, fertilisers, £90,163, medicines, £157,316, other drugs and chemicals, £546,997; electrical and gas appliances, £184,335; electrical materials, £430,016; fancy goods, £245,198; fish, fresh and preserved, £158,201; furniture, £32,871; glass and glassware, £143,670; indiarubber and manufactures, £248,593; instruments, musical, £101,805; instruments, scientific, surgical, etc., £221,121; iron and steel—pig iron, £132,857, bar, hoop, ingot, etc., £623,825, scrap, £63,816, girders, beams, etc., £182,685, plate and sheet, galvanised or corrugated, £1,677,259, not galvanised or corrugated, £217,401, pipes and tubes, £171,516, rails, fishplates, etc., £199,629, tinned plates, plain, £486,311; wire, £230,620; wire netting, £179,649; jewellery and precious stones, £249,150; leather and leather manufactures, £295,990; machines and machinery, £1,882,736; metals, manufactures of, £1,748,284; milk, preserved, £63,162; oils (not essential), £324,116; paints and colours, £312,969; paper, £778,639; pickles, sauces, etc., £123,362; plated ware, £218,432; soap, £44,314; specie, £369,711; spirits, £749,476; stationery, £873,076; tobacco, £57,369; tools of trade, £320,339; varnishes, £69,410; vehicles—bicycles, etc., £144,993, motors, £547,786, other vehicles, £96,304; vessels (ships), £241,245; yarns, £270,854.

4. Imports Shipped from British Possessions.—The growth of the value of imports from other British possessions during the past twenty years has been such as to increase the proportion to total imports from 11.62 per cent. in the years 1891-5 to 12.86 per cent. in 1911, the actual values being respectively £3,176,614 and £3,612,442. Of the total imports from British possessions during 1911, 34.53 per cent., or 4.44 per cent. of all imports, was from New Zealand; 24.64 per cent., or 3.17 per cent. of all imports, from India; 10.22 per cent., or 1.32 per cent. of all imports from Canada; and 8.57 per cent., or 1.10 per cent. of all imports, from Ceylon.

5. Principal Imports, the Produce of British Possessions, 1911.—These are as follows:—

(i.) *Canada.* Apparel and textiles, £17,731; boots and shoes, £10,255; drugs and chemicals, £9927; fish, £61,129; furniture, £23,069; indiarubber and manufactures £12,818; agricultural implements and machinery, £260,955; other machines and machinery, £11,398; metal manufactures, £42,274; paper, £144,363; timber, £121,928; bicycles and other vehicles, £76,516.

(ii.) *Ceylon.* Coir fibre, £4836; leather, £11,818; nuts, £24,699; tea, £673,797. The large increase in the imports from Ceylon—from £217,138 during the years 1891-5, to £738,556 in 1911—is due to the displacement of China teas in the Australian markets by those of India and Ceylon. Of the total imports of tea during the year 1911, 51.94 per cent. was the produce of Ceylon.

(iii.) *Fiji.* Bananas, £162,711; copra, £13,886; sugar—produce of cane, £231,206, molasses, £10,771.

(iv.) *India.* Bags and sacks, £1,136,771; hessians, £176,249; cameos, precious stones, unset, £16,821; carpets, mats, etc., £16,424; coffee and chicory, £37,048; cotton, raw, £16,707; other unmanufactured fibres, £23,224; iron pig, £38,837; linseed, £17,684; rice, £176,153; shellac, £11,592; oils—castor, £76,044, linseed, £12,449; skins and hides, £17,251; spices, £13,142; tea, £283,554; timber, £15,425; wax, paraffin, £51,113; yarns, £14,924.

(v.) *Mauritius*. Sugar, £26,980.

(vi.) *New Zealand*. Apparel and textiles, £11,244; animals—horses, £245,804, sheep, £23,393; military stores, £30,480; fibre, flax, and hemp, £46,249; fish, £33,734; gold, bullion and ore, £1,525,649; grain, barley, £27,743; hops, £9379; implements and machinery (agricultural), £8632; machines and machinery, £10,632; meats, £17,552; seeds, £24,068; skins and hides, £110,718; timber, £576,601; wool, £5413.

(vii.) *Papua*. Gold bullion and ore £63,668.

(viii.) *South African Union*. Bark, tanning, £30,898; explosives, £27,439; precious stones, £145,691.

(ix.) *Straits Settlements*. Spices, £49,085; sago and tapioca, £67,919; canes and rattans, etc., unmanufactured, £11,111; rubber, and rubber manufactures, £28,109.

6. Imports Shipped from Foreign Countries.—The imports direct from foreign countries during the year 1911 represented 28.16 per cent. of the total imports, as compared with 17.12 per cent. during the years 1891-5. Of the total imports into Australia shipped from foreign countries 23.58 per cent.—6.63 per cent. of all imports—was from Germany, and 41.09 per cent.—11.57 per cent. of all imports—was from the United States.

7. Principal Imports the Produce of Foreign Countries, 1911.—The details are as follows:—

(i.) *Austria-Hungary*. Apparel and textiles, £134,250; furniture, £31,617; china-ware, £18,036; glassware, £12,587; fancy goods, £16,607; jewellery and precious stones, £8711; paper and stationery, £16,942; pipes, smoking, etc., £11,984.

(ii.) *Belgium*. Apparel, £86,938; textiles, £146,082; candles, £3001; cement, £13,327; drugs, chemicals, and fertilisers, £8390; glass and glassware, £164,002; iron and steel—partly manufactured, £122,406, girders, beams, etc., £2505, pipes and tubes, £35,334, plate and sheet, £28,713, railway iron, £43,014, wire, £21,332; jewellery, £66,696; machines and machinery, £13,774; matches and vestas, £26,854; metal manufactures, £118,410; motors and parts, £51,342; paper, £38,580, zinc manufactures, £17,988.

(iii.) *Chile*. Barley, £10,355; soda nitrate, £12,974.

(iv.) *China*. Apparel and textiles, £110,266; cotton, raw, £19,057; fish, £13,608; fruit, £17,585; ginger, £6333; iron, pig, £21,476; rice, £57,243; nuts, £19,490; oils, £15,709; tea, £89,304.

The decline of the value of imports from China during the past twenty years is due to the loss of the tea trade, which now draws its supplies mainly from India and Ceylon.

(v.) *France*. Apparel and textiles, £860,887; cream of tartar, £173,669; other drugs and chemicals, £59,701, fruits, £9747; fancy goods, £61,735; jewellery, £19,287; time-pieces, £8393; pipes, smoking, etc., £62,343; motor vehicles and parts, £194,951; perfumery, £21,118; resin, £25,765; rubber manufactures, £46,081; leather, £11,091; spirits, £283,805; tiles, £15,127; wine, £159,782; machinery and manufactures of metal, £57,977.

(vi.) *Germany*. Ale and beer, £88,845; apparel and textiles, £1,600,388; arms, ammunition and explosives, £97,574; brushware, £39,649; cement, £72,753; chinaware, etc., £75,147, earthenware, £38,223; drugs and chemicals—calcium carbide, £10,864, dyes, £20,755; fertilisers, £40,209, other drugs, etc., £140,217; fancy goods, £164,185; furniture, £14,520; minor articles for furniture, £6211; glass and glassware, £108,353; hops, £10,939; indiarubber manufactures, £187,008; metals and manufactures of metals—iron and steel—bar, hoop, ingot, etc., £179,656, plate and sheet, £81,321, pipes and tubes, £32,572, railway iron, £210,757, tools of trade, £35,182; wire, £360,439; wire netting, £146,877; machines and machinery, £260,010; lamps and lampware, £59,694; electrical and gas appliances, £56,848; other manufactures of metals, £480,644; jewellery, cameos, etc., £97,392; leather and leather manufactures (excluding boots and shoes), £70,109;

musical instruments, £445,453; paper, £203,320; spirits, £20,460; stationery, £107,710; tobacco, £9595; paints and varnishes, £15,528.

(vii.) *Italy.* Apparel and textiles, £196,717; fruits, £14,844; matches and vestas, £16,728; marble and stone, £34,572; oils, olive, £8757, essential, £11,195; nuts, £17,055; sulphur, £35,500; motors and parts, £66,448.

(viii.) *Japan.* Apparel and textiles, £427,981; bags, baskets, etc., £25,790; china-ware and earthenware, £18,709; fancy goods, £14,446; fertilisers (superphosphates), £67,801; furniture, £11,315; rice, £9365; oils and waxes, £50,174; spices, £11,008; sulphur, £48,573; timber, etc., £73,341.

(ix.) *Java.* Cotton, raw, £504; hats and caps, £985; rice, £9975; kapok, £137,948; rubber, £31,526; sugar, £144,142; timber, £5765; tobacco, £3352; tea, £195,274.

(x.) *Netherlands.* Apparel and textiles, £63,235; cocoa and chocolate, £70,935; cameos and precious stones, £12,503; metal manufactures, £13,298; paper, £34,522; spirits, £135,122.

(xi.) *Norway.* Calcium carbide, £66,532; fish, £88,957; milk, preserved, £5047; paper, £115,803; timber, £494,576.

(xii.) *Philippine Islands.* Flax and hemp, £72,555; cigars, £37,914.

(xiii.) *Russia.* Flax, £7522; oils, £17,903; timber, £151,187.

(xiv.) *Sweden.* Calcium carbide, £55,267; earthenware, glassware, etc., £10,250; electrical machinery and fittings, £6902; cream separators, £83,372; matches and vestas, £29,956; paper, £154,829; telephones, £32,498; timber, £246,841.

(xv.) *Switzerland.* Apparel and textiles, £786,585; cigars, £14,826; cocoa and chocolate, manufactured, £86,374; confectionery, £29,388; milk, £3765; watches, £95,994.

(xvi.) *United States of America.* Apparel and textiles—Boots and shoes, £92,087; other apparel, £158,415; textiles, £248,658; arms, £51,569; ammunition and explosives, £56,268; cameras, magic lanterns, phonographs, etc., £97,936; clocks and watches, £90,994; fancy goods, &c., £104,619; fish, £151,124; furniture, £77,140; glass and glassware, £40,331; glucose, £33,997; indiarubber manufactures, £70,585; leather, £253,240; meats, £75,327; medicines, £84,591; metal manufactures—iron and steel: bars, ingots, hoops, etc., £55,445, girders, beams, etc., £57,667, pipes and tubes, £75,163, plate and sheet, £165,252, railway iron, £309,578; tools of trade, £285,247; wire, £316,787; machines and machinery, agricultural, £266,488; other machines and machinery, £1,093,910; other metal manufactures, £458,999; musical instruments, £45,082; oils, fats and waxes—benzine and gasoline, £68,072; kerosene, £472,390, lubricating oils and greases, £160,520, naphtha, £42,627, paraffin wax, £17,337, turpentine, £187,729; paints and varnishes, £77,710; paper, £199,414; resin, £67,198; sausage casings, £67,948; soap, £51,178; stationery, £103,601; surgical and dental instruments, £524,484; timber, £1,095,430; tobacco, cigars, etc., £642,574; wood manufactures, £113,255; vehicles, motors and parts, £260,577; other vehicles and parts, £114,588.

8. *Direction of Exports.*—The following table shews the average yearly value of exports to principal countries during each quinquennial period from 1891 to 1910 and for the year 1911. As in the case of the import trade, considerable alteration in the direction of exports is evident. The largest increases in exports to British possessions are shewn to the South African Union and to India and Ceylon. During the South African war large shipments of gold were sent from the Commonwealth to that country, and the decline in the value of the exports to South Africa is due to the cessation of these shipments together with a decline in the exports of timber. The exports to India and Ceylon are also mainly of gold, of which exceptionally heavy shipments were made during 1904, 1905 and 1911. The large increases in the case of Belgium, Germany, and France is not entirely due to increased purchases by those countries of

Australian goods, but is due in some measure to the larger quantities of wool, skins, etc., shipped direct to the Continent, instead of, as formerly, reaching the Continent through London. The figures given below, however, do not, even now, denote the total purchases by European countries of Australian produce, as large quantities are still distributed from London.

TRADE OF THE COMMONWEALTH WITH VARIOUS COUNTRIES, 1891 to 1911.

EXPORTS (INCLUDING BULLION AND SPECIE).

Country.	Yearly Average of Quinquennial Periods.				Year 1911.
	1891-5.	1896-1900	1901-5.	1906-10.	
	£	£	£	£	£
United Kingdom ...	23,804,217	24,624,332	23,990,168	32,984,176	35,303,982
British Possessions—					
Canada ...	10,488	72,481	33,728	223,432	118,284
Ceylon ...	300,847	793,715	4,066,941	2,214,387	5,412,705
Fiji ...	123,131	154,256	226,901	339,457	435,232
Hong Kong ...	522,127	357,550	517,352	721,301	780,924
India ...	496,136	1,203,261	2,745,876	2,283,620	3,319,504
Mauritius ...	68,590	32,608	51,677	41,742	27,969
New Zealand ...	948,523	1,010,909	1,538,277	2,379,821	2,655,469
Papua ...	15,959	39,560	48,342	70,846	127,713
South African Union ...	201,341	1,280,195	4,074,674	1,890,495	1,717,894
Straits Settlements ...	116,720	99,586	135,962	521,303	1,205,258
Other British Possessions ...	7,926	22,819	67,220	68,142	74,499
Total British Possessions	2,811,788	5,066,890	13,507,450	10,754,546	15,825,451
Total British Countries ...	26,616,005	29,691,222	37,437,618	43,738,722	51,135,433
Foreign Countries—					
Argentine Republic ...	195	12,344	28,585	65,793	108,657
Belgium ...	1,454,719	1,452,131	2,035,736	4,985,472	6,111,943
Chile and Peru ...	156,348	182,397	380,332	656,295	759,435
China ...	23,650	188,970	223,817	237,043	155,789
France ...	1,900,754	2,664,461	3,541,828	6,777,332	8,180,084
Germany ...	1,445,327	1,925,381	3,171,930	6,361,734	6,642,012
Hawaiian Is., New Britain, New Caledonia, New He- brides and South Sea Is.	233,472	318,225	360,368	433,741	625,291
Italy ...	41,844	158,610	148,906	265,808	489,988
Japan ...	29,722	135,820	363,314	1,144,826	332,958
Java ...	69,160	100,536	155,021	280,275	488,696
Netherlands ...	48,296	46,451	185,088	305,015	257,136
Norway ...	891	99	95	5,162	2,010
Philippine Islands ...	85,068	95,841	304,187	523,242	512,083
Spain ...	10,147	9,253	34,408	44,820	1,493
Sweden ...	1,266	931	1,615	4,265	1,754
United States of America ...	1,341,563	3,738,739	2,398,470	2,667,546	1,464,155
Other Foreign Countries ...	224,282	371,916	466,296	839,520	1,713,339
Total Foreign Countries	7,066,704	11,402,105	13,800,046	25,597,889	28,346,825
Total ...	33,682,700	41,093,327	51,237,664	69,336,611	79,482,258

If each item be expressed as a percentage on the total export, the results will be as follows:—

COMMONWEALTH EXPORTS.—PERCENTAGES OF THE EXPORTS TO EACH COUNTRY ON THE TOTAL EXPORTS, 1891 to 1911.

Country.	1891-5.	1896-1900.	1901-5.	1906-10.	1911.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom	70.68	59.92	46.71	47.57	44.42
British Possessions—					
Canada	0.08	0.18	0.07	0.32	0.15
Ceylon	0.89	1.93	7.94	3.20	6.81
Fiji	0.36	0.38	0.44	0.49	0.55
Hong Kong	1.55	0.87	1.00	1.04	0.92
India	1.47	2.93	5.36	3.29	4.18
Mauritius	0.20	0.08	0.10	0.06	0.03
New Zealand	2.82	2.46	3.00	3.43	3.34
Papua	0.05	0.10	0.10	0.10	0.16
South African Union ...	0.60	3.11	7.95	2.73	2.16
Straits Settlements ...	0.35	0.24	0.27	0.75	1.52
Other British Possessions ...	0.02	0.05	0.13	0.10	0.09
Total British Possessions	8.34	12.33	26.36	15.51	19.91
Total British Countries ...	79.02	72.25	73.07	63.08	64.33
Foreign Countries—					
Argentine Republic ...	0.00	0.03	0.06	0.09	0.14
Belgium	4.32	3.53	3.98	7.19	7.69
Chile and Peru	0.47	0.44	0.74	0.95	0.96
China	0.07	0.46	0.44	0.34	0.19
France	5.65	6.49	6.91	9.77	10.30
Germany	4.29	4.69	6.19	9.17	8.36
Hawaiian Is., New Britain, New Caledonia, New He- brides and South Sea Is. ...	0.69	0.77	0.70	0.63	0.79
Italy	0.12	0.39	0.29	0.38	0.62
Japan	0.09	0.33	0.71	1.65	1.05
Java	0.21	0.25	0.30	0.40	0.61
Netherlands	0.14	0.11	0.36	0.44	0.32
Norway	0.00	0.00	0.00	0.01	0.00
Philippine Islands ...	0.25	0.23	0.59	0.76	0.64
Spain	0.03	0.02	0.07	0.07	0.00
Sweden	0.00	0.00	0.00	0.01	0.00
United States of America ...	3.98	9.10	4.68	3.85	1.84
Other Foreign Countries ...	0.67	0.91	0.91	1.21	2.16
Total Foreign Countries...	20.98	27.75	26.93	36.92	35.67
Total	100	100	100	100	100

9. Exports to the United Kingdom.—Notwithstanding an increase of 48.35 per cent. in the actual value of exports to the United Kingdom during the year 1911 as compared with the yearly average of the period 1891-95, the proportion of the total exports despatched to the United Kingdom has fallen from 70.68 per cent. in the earlier period to 44.42 per cent. in the year 1911. This decrease is, to some extent, undoubtedly

due to the fact that wool and other commodities which were formerly despatched to the United Kingdom, and distributed from that centre, are now to a greater extent shipped direct to continental ports.

The principal exports to the United Kingdom during the year 1911 were as follows:—Butter, £4,251,364; fruit—apples, £266,662, other, including pulp, £45,191; grain and pulse—wheat, £6,555,690; flour, £190,797, other, £38,412; hair, £28,079; jewellery and precious stones, £221,674; leather, £322,409; meat, frozen—beef, £313,393, mutton, £864,582, lamb, £665,051, rabbits and hares, £397,949, other frozen meat, £64,770; potted meat, £91,219; meat, preserved in tins, £605,977; minerals and metals—copper—concentrates, £416, ingots, £181,743, in matte, £325,794, ore, £63,754; gold—bullion, £910,573, in matte, £383,380, ore, £51,488; silver—bullion, £35,492, in matte, £205,467, silver and silver-lead—concentrates, £21,889, ore, £11,194; lead—pig, £411,162, in matte, £243,063; ores, other, £57,682; tin, ingots and ore, £623,463; zinc concentrates, £57,526; oil, cocoanut, £150,301; pearlshell, £162,010; skins—hides, £279,474, rabbit and hare, £347,006, sheep, £585,756, other skins, £278,915; specie, gold, £639,840; tallow, £1,491,935; timber, £84,161; wine, £118,805; wool—greasy, £8,832,510, scoured £2,326,825.

10. **Exports to British Possessions.**—The exports from the Commonwealth to other British Possessions are largely composed of gold despatched to India and Ceylon. These gold shipments to which further reference is made on page 616 were particularly heavy in 1911, being greater in that year than in any year since 1891. Of the total exports to British Possessions during 1911, viz., £15,825,451, as much as £9,626,124 or 60.88 per cent. was gold.

11. **Principal Exports to British Possessions, 1911.**—These are as follows:—

(i.) *Canada.* Butter, £9,806; meats, £40,837; oil, cocoanut, £1308; skins, £39,081; timber, undressed, £6640; tin, ingots, £8333; wool, £2824.

(ii.) *Ceylon.* Butter, £3118; fodder, £6576; horses, £3622; specie, £5,115,000; grain—flour, £22,586; lead, pig, £29,839; silver, bullion, £168,750; soap, £11,602; sugar, £5396.

(iii.) *Fiji.* Apparel and textiles—apparel, including boots and shoes, £19,904; textiles, £10,687; bags, sacks, and cordage, £1807; biscuits, £20,568; coal, £16,776; drugs and chemicals—fertilizers, £6268, other, £5673; grain, prepared—bran, pollard, and sharps, £25,475; flour, £17,649; machines and machinery, £12,255; metal manufactures, £45,843; oils, £8528; specie, £90,320; timber, £13,127; vehicles, £11,823; vessels, £6000.

(iv.) *Hong Kong.* Butter, £21,803; fish, £21,351; flour, £44,784; lead, pig, £63,257; sandalwood, £62,566; specie, gold, £466,657.

(v.) *India.* Coal, £18,924; gold, bullion, £799,270; specie, £1,594,800; horses, £135,840; hay and chaff, £6993; lead, pig, £13,351; meats, £11,675; silver bullion, £281,030; tallow, £9221; timber, undressed, £358,439; wool, £21,290.

(vi.) *New Zealand.* Apparel, textiles, etc.:—apparel—boots and shoes, £4064; other apparel, £26,541; textiles, £50,894; bags and sacks, £3021; bark, tanning, £29,105; books and periodicals, £59,268; cameras, magic lanterns, phonographs, etc., £42,078; coal, £111,555; copper, ingots, £5873; drugs and chemicals—fertilisers, £89,526; medicines, £35,712; other drugs, etc., £39,123; electrical materials, £12,116; fodders, £20,286; fruit, fresh, £60,445, dried, £9186; glass and glassware, £9810; grain—flour, £21,660; oats, £30,849, rice, £39,438; horses, £17,322; indiarubber manufactures, £104,171; iron, pig, £2095; jewellery and precious stones, £17,056; lead, pig, £14,956; leather and leather manufactures, £53,518; metals, manufactures of—agricultural implements and machinery, £16,091; other machines and machinery, £64,097; other manufactures of metals, £84,865; oils, etc., £10,233; onions, £10,637; plants, trees and bulbs, £13,522; salt, £6070; seeds, £14,076; soap, £28,594; specie—gold, £760,000;

spirits, £27,080; stationery, £74,835; sugar, £7941; tea, £70,120; timber, £213,199; tin, ingots, £35,243; tobacco, £80,951; wine, £24,056.

(vii.) *Papua*. Apparel and textiles, etc., £12,496; flour, £3154; machinery and manufactures of metal, £17,354; meats, £14,014; rice, £8697; tobacco, £7413.

(viii.) *South African Union*. Animals, living—sheep, £21,531; butter, £119,642; fruits—fresh, £3410; other, £2840; grain—wheat, £415,982; flour, £267,705; jams and jellies, £9818; leather, £84,393; meats, frozen beef, £67,940; mutton and lamb, £28,365; other meats, £46,696; oil, cocoanut, £17,402; seeds, £4309; specie, gold, £305,000; sugar, £57,896; tallow, unrefined, £76,811; timber, £132,400.

(ix.) *Straits Settlements*. Butter, £29,047; coal, £69,655; grain, flour, £179,001; horses, £12,939; machines and machinery, £16,286; meats, £44,382; specie, gold, £501,997; tin ore, £277,961; tin concentrates, £19,327.

12. Exports to Foreign Countries.—The foregoing table shews a very great increase in the value of exports to foreign countries, both in actual amounts and in relation to total exports. The value of exports to foreign countries during 1911 shews an increase of 301 per cent. over similar figures for the years 1891-5, thus increasing the proportion per cent. of all exports from 20.98 per cent. in the earlier years to 35.67 per cent. in 1911. This increase is largely due to the direct consignment of wool and other produce to European countries, instead of distributing from London, as in the earlier years. A striking feature in this table is the apparent contraction of exports to the United States. From the figures given in the table, it would appear that the sales to the United States were less in 1911 than the annual average during the past fifteen years. These figures, however, include gold bullion and specie, which during the quinquennium 1896-1900 amounted to an average of nearly £3,000,000 per annum, and nearly £1,300,000 during the period 1901-5; whereas during 1911 no gold bullion or specie was shipped to the United States of America.

13. Principal Exports to Foreign Countries, 1911.—These are as follows:—

(i.) *Argentine Republic*. Agricultural implements and machinery, £90,894; timber, £17,064.

(ii.) *Belgium*. Bark, tanning, £11,576; copper, £270,207; grain, wheat, £283,216; lead, £25,511; leather, £9173; silver and silver-lead ore, £70,243; concentrates, £970,510; hides and skins, £456,379; tallow, £117,967; timber, £21,699; tin, £24,070; wool, £2,552,282; zinc ore, £15,600, concentrates, £1,216,255.

(iii.) *Chile*. Coal, £338,350; wheat, £80,737.

(iv.) *China*. Butter, £12,345; coal, £2700; copper, £18,050; flour, £12,615; lead, £48,586; sandalwood, £2348; specie, gold, £22,155; timber, undressed, £14,250.

(v.) *Egypt*. Butter, £11,227; flour, £25,156; meats—beef, £19,308, mutton and lamb, £6248, other meats, £1120; timber, undressed, £48,594; wheat, £29,603.

(vi.) *France*. Butter, £20,383; concentrates—silver, £43,250, zinc, £102,324; copper, £128,695; hides and skins, £765,294; lead, £33,916; ores, £24,234; tallow, £62,967; wheat, £955,012; wool, £6,016,293.

(vii.) *Germany*. Bark, tanning, £60,121; concentrates—silver, £78,398, zinc, £151,106; copper, £498,479; fruit, fresh, £28,345; grain—bran, pollard, and sharps, £4223, wheat, £45,869; hides and skins, £140,713; lead, £21,073; linseed cake and oilcake, £3000; meats, preserved in tins, £8,967; oil, cocoanut, £8466; ores—scheelite, £11,151, silver and silver lead, £91,832, wolfram, £81,047, other ores, £22,068; precious stones, unset, £21,155; sausage casings, £74,048; specie, gold, £280,000; tallow, £33,720; timber, £20,606; tin ingots, £29,238; wool, £4,851,785.

(viii.) *Italy*. Copper, £70,440; lead, £13,512; meats, preserved, £30,049; skins, £69,115; tallow, £39,193; tin ingots, £11,994; wool, £245,804.

(ix.) *Japan.* Butter, £8067; grain, wheat, £17,211; hides, £11,060; lead, £187,778; manures, £42,640; oils, £8912; tallow, £53,820; wool, £459,000.

(x.) *Java.* Butter, £76,618; cattle, £21,501; coal, £65,819; fertilisers, £11,952; flour, £242,898; horses, £19,235; meats, £12,415; specie, gold, £1000.

(xi.) *Netherlands.* Concentrates—silver, £41,650, zinc, £91,659; silver ore, £73,105; tallow, £12,207; wheat, £9044; wool, £13,224.

(xii.) *Peru.* Coal, £34,650; wheat, £283,702.

(xiii.) *Philippine Islands.* Butter, £25,252; cattle, £13,580; coal, £82,914; flour, £141,498; fodder, £27,332; horses, £7795; meats—bacon and hams, £17,401, beef, £114,989, mutton, £9282, pork, £6774, other meats, £8879; timber, £19,616.

(xiv.) *United States of America.* Coal, £98,201; copper, £271,167; gold, in matte, £53,199; hides and skins, £244,082; pearlshell, £166,143; silver in matte, £14,355; tin, £34,867; wool, £500,015.

§ 6. Development of Export Trade to Eastern Countries.

1. **Trade with Eastern Countries.**—During recent years attention has been given by Australian exporters to the possibilities of the markets of Eastern countries. Commissioners have been sent by the States to Eastern trade centres to investigate and advise as to the requirements of these markets in regard to such commodities as Australia is prepared to supply, and a survey of the export returns of the past decade discloses a very material expansion in the value of the exports of merchandise in the direction indicated.

The principal countries concerned in this trade are China, India, Ceylon, Japan, Java, Philippine Islands, Straits Settlements, and Hong Kong, and the particulars given in the following tables apply to these countries only:—

VALUE OF PRINCIPAL ITEMS OF MERCHANDISE EXPORTED FROM THE COMMONWEALTH TO EASTERN COUNTRIES, 1901 and 1907-11.

Article.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
Butter	64,585	136,299	151,984	166,046	171,372	181,418
Coal	154,950	319,292	501,002	293,584	265,011	240,012
Copper	39,375	250,461	239,646	43,255	29,080	26,296
Grain and pulse—						
Wheat	46,685	173,528	111,885	68,558	49,596	17,502
Flour	134,861	692,879	294,615	359,877	421,444	655,287
Other (prepd. & unprepd.)	5,918	17,614	10,536	17,690	21,603	21,748
Hay, chaff, and comp. fodder	13,081	34,549	29,554	30,884	31,838	50,437
Horses	101,866	302,809	199,239	165,370	227,848	162,736
Lead	10,454	179,346	203,799	115,310	230,461	943,915
Meats	193,751	188,197	248,799	206,759	229,461	269,462
Sandalwood	3,738	66,309	77,468	45,120	88,624	73,386
Skins, hoofs, sinews, tallow	94,651	71,758	43,167	46,428	28,158	85,701
Tin ore	4,096	187,702	205,114	186,191	194,066	277,961
Timber, undressed ...	79,913	362,999	367,322	447,347	351,830	398,049
Wool	56,618	501,886	147,416	281,537	444,890	480,850
Other merchandise...	217,105	304,769	338,097	270,433	336,470	412,100
Total merchandise	1,221,647	3,790,397	3,169,643	2,744,189	3,121,752	3,706,860
Specie & gold & silver bullion	3,337,611	6,059,490	4,014,545	4,394,792	1,873,102	8,951,059
Total exports	4,559,258	9,849,887	7,184,188	7,138,981	4,994,854	12,657,919

The figures for 1911 presented above shew a very satisfactory increase in the aggregate value of merchandise exported to eastern countries in comparison with the three years immediately preceding, though there have been considerable changes in its composition.

For instance, in 1908 the exports of coal were valued at £501,002 against £240,012 in 1911; copper, which in 1905 represented £426,987, in 1911 represented only £26,296, and the value of horses exported has declined from £329,515 in 1905 to £182,736 in 1911. The flour trade shews marked oscillations. In 1907 the exports of flour to eastern countries were valued at £692,879, but owing to an indifferent wheat crop the exports to the same countries during the next year fell to £294,615. Although the flour trade with Java, the Philippines, and Straits Settlements has since been recovered, the trade with Hong Kong and China—though shewing continuous improvement—(see page 609) only represented £57,399 in 1911 as against £241,260 in 1907. During the year 1910-11 the exports of flour from the United States of America to Hong Kong and China were valued at £1,049,020. The trade with the eastern countries in butter shews on the whole a consistently steady increase, notwithstanding some diminution in the exports to China and to the Philippines. The exports of meats also shew an increased trade. Though the business done with the Philippines—our largest eastern customer—is materially less than in 1908, the report of Mr. J. B. Suttor, A.M.I.C.E., Commercial Commissioner for New South Wales in the East, shews that of the fresh meat imported into the Philippines during 1911 over 95 per cent. was from Australia. Mr. Suttor, however, also shews there is ample room for expansion of the trade in tinned meats, supplies of which are at the present time drawn almost entirely from the United States. It may be mentioned that exports of gold from Australia to eastern countries, chiefly to India and Ceylon, have no bearing upon the business connections of the Commonwealth with those countries, as the destination of these gold shipments, which are merely a contribution towards the liquidation of the international obligations of the Commonwealth, is determined almost entirely by London bankers.

The following tables shew the value of the principal articles exported to each of the undermentioned eastern countries during each of the years 1901 and 1907 to 1911:—

VALUE OF COMMONWEALTH EXPORTS OF MERCHANDISE TO PRINCIPAL EASTERN COUNTRIES, 1901 and 1907-11.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
China ...	128,976	404,501	264,563	116,236	95,771	133,634
India and Ceylon ...	3,280,190	825,037	901,583	745,629	759,057	773,359
Japan ...	123,355	706,279	267,963	432,692	657,057	832,958
Java ...	197,412	274,910	260,344	290,703	340,315	487,696
Philippine Islands ...	302,086	570,528	604,089	531,438	473,268	512,085
Straits Settlements ...	113,528	549,402	575,911	444,611	544,815	703,261
Hong-Kong ...	418,711	459,740	295,821	162,880	251,469	263,867
Total ...	4,559,258	3,790,397	3,170,674	2,744,189	3,121,752	3,706,860

BUTTER.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
China ...	1,987	13,338	11,207	17,397	19,352	12,345
Hong Kong ...	8,555	15,443	21,713	19,696	21,767	21,303
India and Ceylon ...	9,696	6,766	8,627	7,373	9,239	8,942
Japan ...	1,504	6,464	7,063	4,375	5,383	8,067
Java ...	11,919	45,600	39,583	54,267	61,366	76,618
Philippine Islands ...	21,061	23,040	46,447	42,102	30,865	25,252
Straits Settlements...	9,863	25,648	17,344	20,536	23,400	28,891
Total ...	64,585	136,299	151,984	166,046	171,372	181,418

The exports of butter given above for the year 1911 were shipped from the several States as follows:—New South Wales, £66,838; Victoria, £75,965; Queensland, £34,543; South Australia, £4072.

COAL.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
China ...	...	18,474	20,041	7,470	1,245	2,700
Hong Kong ...	7,653	26,572	39,040	17,908	5,321	...
India and Ceylon ...	17,639	30,333	94,617	84,205	32,753	18,924
Japan ...	1	2,650	...	...	63	...
Java ...	43,110	18,893	44,614	34,132	47,856	65,819
Philippine Islands...	59,936	155,430	190,920	121,668	105,195	82,914
Straits Settlements...	26,611	66,940	111,770	78,201	72,578	69,655
Total ...	154,950	319,292	501,002	293,584	265,011	240,012

These exports of coal are chiefly from New South Wales. The decline in the exports of coal is, doubtless, due to the coal miners' strike in November, 1909. Mr. J. B. Suttor, Commercial Commissioner for New South Wales in the East, in his report for 1909 says that, owing to the uncertainty of deliveries from Australia, in consequence of labour troubles, the time is far distant when the trade will again reach the dimensions of recent years. The import returns for the Philippines show 234,723 tons of coal at 3.07 dollars per ton from Japan during 1911, against 173,635 from Australia at 2.62 dollars per ton.

COPPER.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
China ....	...	148,979	172,196	23,100	18,469	18,050
Hong Kong ...	...	15,401	...	8,500	1,120	5,426
India and Ceylon ...	39,375	85,096	62,011	6,800	8,959	300
Japan ...	...	470	1,465	145	...	2,520
Java ...	...	515	2,334	318	...	...
Straits Settlements...	...	...	1,640	4,392	...	...
Philippine Islands ...	...	...	...	...	532	...
Total ...	39,375	250,461	239,646	43,255	29,080	26,296

The copper exported to the East during 1911 was shipped as follows: New South Wales, £24,746; Victoria, £1550.

GRAIN AND PULSE—WHEAT.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
China ...	...	103,593	...	10	18	...
Hong Kong ...	...	12,225	...	...	14	...
India and Ceylon ...	35,660	6,828	111,872	22,414	162	228
Japan ...	11,016	50,881	13	12,694	49,379	17,211
Java ...	9	1	...	84	17	11
Philippine Islands ...	...	...	...	33,404	...	29
Straits Settlements...	...	...	...	2	6	23
Total ...	46,685	173,528	111,885	68,558	49,596	17,502

The exports of wheat given above for the year 1911 were shipped from the following States:—New South Wales, £17,242; Victoria, £210; South Australia, £13; Western Australia, £37.

GRAIN AND PULSE—FLOUR.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
China ...	1,147	47,037	3,221	2,671	6,094	12,615
Hong Kong ...	4,489	194,223	4,449	15,462	16,144	44,784
India and Ceylon ...	22,275	18,349	24,368	23,412	23,857	32,319
Japan ...	7,206	3,820	1,149	2,946	7,583	2,172
Java ...	82,335	144,091	119,397	132,908	166,177	242,898
Philippine Islands...	4,046	139,958	90,653	117,825	87,663	141,498
Straits Settlements...	13,363	145,401	52,513	64,653	113,921	179,001
Total ...	184,861	692,879	294,615	359,877	421,444	655,287

The flour exported during 1911, as above, was shipped from the several States as follows:—New South Wales, £268,340; Victoria, £211,680; Queensland, £230; South Australia, £156,479; Western Australia, £18,558.

GRAIN AND PULSE, OTHER THAN WHEAT AND FLOUR.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
China ...	2,934	3,423	226	21	759	861
Hong Kong ...	28	1,015	81	149	95	5
India and Ceylon ...	5,848	6,880	6,144	7,451	9,687	9,894
Japan ...	57	88	152	15	12	133
Java ...	14	1,563	1,380	1,735	2,086	1,490
Philippine Islands...	2,582	3,675	1,847	7,651	8,115	7,881
Straits Settlements...	1,618	970	706	668	849	1,484
Total ...	13,081	17,614	10,536	17,690	21,603	21,748

The exports given above for 1911 were shipped from the following States:—New South Wales, £5130; Victoria, £15,967; Queensland, £10; South Australia, £574; Western Australia, £67.

HAY AND CHAFF, AND COMPRESSED FODDER.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
China ...	2,934	389	74	700	45	21
Hong Kong ...	28	1,023	387	61	149	989
India and Ceylon ...	5,848	12,065	8,777	8,321	11,204	14,094
Japan ...	57	302	560	19	3	591
Java ...	14	967	1,573	984	1,111	1,270
Philippine Islands...	2,582	16,300	15,340	18,550	15,037	27,332
Straits Settlements...	1,618	3,513	2,843	2,049	4,289	6,140
Total ...	13,081	34,549	29,554	30,634	31,838	50,437

The exports given above for the year 1911 were shipped from the several States as follows:—New South Wales, £6267; Victoria, £43,414; Queensland, £36; South Australia, £95; Western Australia, £625.

HORSES.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
China	4,460	3,299	892	295	60	390
Hong Kong	775	205	545	888	...	800
India and Ceylon ...	78,713	230,187	141,486	128,887	179,348	139,462
Japan	100	11,715	12,234	60	1,860	2,115
Java	2,105	25,502	16,457	19,598	10,424	19,235
Philippine Islands ...	190	4,949	12,134	5,303	14,971	7,795
Straits Settlements...	15,513	26,952	15,491	10,339	21,185	12,939
Total	101,866	302,809	199,289	165,370	227,848	182,736

The horses exported to the above countries during 1911 were shipped from the following States:—New South Wales, £34,976; Victoria, £79,187; Queensland, £55,044; South Australia, £12,940; Western Australia, £589.

LEAD, PIG.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
China	6,102	20,529	28,456	13,716	24,661	48,586
Hong Kong	1,257	74,493	85,625	22,062	66,997	63,257
India and Ceylon ...	315	61,822	59,250	27,400	56,717	43,190
Japan	2,750	20,315	30,040	47,905	77,493	187,778
Java	18	...	106	198	...	...
Philippine Islands ...	12	330	298	4,029	4,553	1,104
Straits Settlements...	...	1,857	24	...	40	...
Total... ..	10,454	179,346	203,799	115,310	230,461	343,915

The above lead is almost entirely from the Broken Hill mines of New South Wales.

MEATS—PRESERVED BY COLD PROCESS.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
China ... ..	...	...	261	1,099	...	...
Hong Kong	3,195	7,051	7,746	5,332	7,373	11,273
India and Ceylon ...	5,907	4,455	3,581	1,916	4,252	5,029
Japan	19	435	5,391	1,342	445	935
Java ... ..	...	884	2,539	949	920	3,540
Philippine Islands ...	153,250	126,498	181,460	139,260	143,581	135,249
Straits Settlements...	...	20,746	18,376	21,320	25,849	37,593
Total... ..	162,371	160,069	219,354	171,218	182,420	194,619

The exports to the above-mentioned Eastern countries during 1911 of meats preserved by cold process were shipped from the following States:—New South Wales, £34,152; Victoria, £1787; Queensland, £158,680. In addition to the meat included in

the above table, meat preserved by cold process to the value of £112,025 in 1906, £115,000 in 1907, and £70,358 in 1908 was exported to Asiatic Russia.

MEATS—OTHER THAN MEATS PRESERVED BY COLD PROCESS.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
China	491	4,107	2,367	2,841	5,205	6,531
Hong Kong	571	890	622	1,249	1,853	4,238
India and Ceylon	11,464	8,211	10,054	16,267	12,936	14,415
Japan	893	1,376	1,076	1,104	1,137	1,659
Java	14,813	4,501	6,224	5,889	8,591	8,875
Philippine Islands	2,617	6,943	7,391	6,531	10,707	22,336
Straits Settlements	531	2,100	1,711	1,660	6,612	6,789
Total	31,380	28,128	29,445	35,541	47,041	64,843

The exports given above for the year 1911 were shipped from the following States:—New South Wales, £8284; Victoria, £3733; Queensland, £52,167; South Australia, £635; Western Australia, £24.

SANDALWOOD.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
China	7,905	10,886	6,238	12,180	7,332	2,348
Hong Kong	53,991	51,078	65,937	25,546	71,672	62,566
India and Ceylon	...	1,803	5,604	2,358	6,301	2,505
Straits Settlements	15,341	2,542	589	5,036	3,319	5,967
Total	77,237	66,309	77,468	45,120	88,624	73,386

These exports of sandalwood in 1911 were shipped from Queensland, £7880; and Western Australia, £65,506.

SKINS, HOOFS, HORNS, BONES, SINEWS, AND TALLOW.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
China	...	77	14	36	...	977
Hong Kong	1,234	838	1,706	779	401	129
India and Ceylon	2,761	8,754	5,319	2,958	3,485	9,880
Japan	8,559	60,285	35,459	40,363	23,145	72,509
Java	...	41	315	1,305	337	1,296
Philippine Islands	165	1,012	91	626	389	577
Straits Settlements	430	751	263	361	401	333
Total	13,149	71,758	43,167	46,428	28,158	85,701

The above exports of skins, etc., in 1911 were shipped from the several States as follows:—New South Wales, £25,404; Victoria, £16,926; Queensland, £43,331; South Australia, £40.

TIN ORE.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
Straits Settlements	4,096	187,702	205,114	186,191	194,066	277,961

The export of tin ore to the Straits Settlements—the centre of the world's tin production—is for the purpose of treatment, and was shipped from the several States during 1911 as follows:—New South Wales, £145,380; Victoria, £11,055; Queensland, £69,275; Western Australia, £30,276; Northern Territory, £21,975.

TIMBER, UNDRESSED.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
China ...	4,090	19,897	18,060	26,606	2,699	14,250
Hong Kong ...	...	2,739	29,015	30,298	19,590	763
India and Ceylon ...	61,246	267,376	278,372	379,349	307,001	362,549
Japan ...	418	6,202	4,332	1,296	781	476
Java ...	20	330	251	56	307	15
Philippine Islands ...	9,278	65,046	30,849	3,372	21,132	19,616
Straits Settlements...	4,861	1,909	11,443	6,370	320	380
Total	79,913	362,999	367,322	447,347	351,830	398,049

The above exports of timber during 1911 from the several States were shipped as follows:—New South Wales, £62,227; Victoria, £448; Queensland, £1921; Western Australia, £323,650; Tasmania, £9803.

WOOL.

Country.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
China ...	...	...	300	250	...	560
India and Ceylon ...	7,853	20,115	21,708	16,657	24,268	21,290
Japan ...	48,653	481,771	125,408	264,630	420,622	459,000
Java ...	112	...	...	...	...	...
Total	56,618	501,886	147,416	281,537	444,890	480,850

The wool exported to the East by the several States during 1911 was shipped as follows:—New South Wales, £404,964; Victoria, £24,084; Queensland, £51,802.

§ 7. Trade of Commonwealth since Federation.

1. **Classified Summary of Australian Trade.**—The tables hereunder present the trade of the Commonwealth during each of the years 1901 and 1907 to 1911, arranged in classes according to the nature of the goods.

It was long ago pointed out¹ that the statistical presentation of imports and exports would be increased in value by being properly arranged under categories (classes and orders). The following arrangement has been adopted:—

1. By R. M. Johnston, I.S.O., the Statistician of the State of Tasmania.

STATISTICAL CLASSIFICATION OF IMPORTS AND EXPORTS.

Class.	Articles.
I.	FOODSTUFFS of animal origin, excluding, however, living animals.
II.	FOODSTUFFS of vegetable origin, and common salt.
III.	BEVERAGES, non-alcoholic only, and the substances used in making them.
IV.	SPIRITS AND ALCOHOLIC LIQUORS, including spirits for industrial purposes, and such pharmaceutical preparations as are dutiable as spirits.
V.	TOBACCO, and all preparations thereof.
VI.	LIVE ANIMALS.
VII.	ANIMAL SUBSTANCES, mainly unmanufactured, which are not foodstuffs.
VIII.	VEGETABLE SUBSTANCES and non-manufactured fibres.
IX.	APPAREL, TEXTILES, and various manufactured fibres.
X.	OILS, FATS, and WAXES.
XI.	PAINTS AND VARNISHES.
XII.	STONES and MINERALS, used industrially.
XIII.	SPECIE, gold, silver, and bronze.
XIV.	METALS, UNMANUFACTURED, and ores.
XV.	METALS, PARTLY MANUFACTURED.
XVI.	METALS, MANUFACTURED, including machinery.
XVII.	LEATHER AND MANUFACTURES of leather, together with all substitutes therefor, and also INDIARUBBER and INDIARUBBER MANUFACTURES.
XVIII.	WOOD and WICKER, both raw and manufactured.
XIX.	EARTHENWARE, CEMENTS, CHINA, GLASS AND STONEWARE.
XX.	PAPER AND STATIONERY.
XXI.	JEWELLERY, TIMEPIECES, AND FANCY GOODS.
XXII.	OPTICAL, SURGICAL, AND SCIENTIFIC INSTRUMENTS.
XXIII.	DRUGS, CHEMICALS, AND FERTILISERS.
XXIV.	MISCELLANEOUS.

COMMONWEALTH IMPORTS ARRANGED IN CLASSES, 1901 and 1907 to 1911.

Classes.	1901.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£	£
I. Animal foodstuffs, etc. ...	793,365	688,642	834,542	751,044	873,697	816,915
II. Vegetable ...	2,925,985	1,574,938	2,192,674	2,741,811	1,944,050	2,352,957
III. Beverages (non-alcoholic), etc. ...	1,054,324	1,549,785	1,232,292	1,409,713	1,646,052	1,673,449
IV. Alcoholic liquors, etc. ...	1,845,438	1,556,224	1,575,151	1,496,952	1,654,237	1,920,824
V. Tobacco, etc. ...	717,915	753,869	778,314	616,221	769,470	899,110
VI. Live animals ...	40,306	114,787	108,067	113,724	337,040	395,665
VII. Animal substances, etc. ...	124,017	576,554	400,748	336,981	370,634	296,926
VIII. Vegetable ...	459,361	863,603	944,233	997,205	1,120,045	1,329,295
IX. Apparel, etc. ...	12,065,367	15,367,604	13,844,687	14,765,738	17,438,605	17,840,496
X. Oils, etc. ...	1,290,252	1,192,177	1,190,815	1,337,429	1,596,643	1,807,983
XI. Paints, etc. ...	885,049	445,769	419,809	416,418	481,392	485,240
XII. Stones, etc. ...	131,095	127,372	119,248	164,069	469,598	173,533
XIII. Specie ...	172,395	406,875	239,088	54,197	374,484	381,482
XIV. Metals, unmanufd., ores, etc. ...	984,327	1,763,202	1,178,535	1,232,610	1,221,721	1,937,723
XV. Metals, part manufactured ...	1,062,309	797,354	749,036	741,184	1,035,884	1,169,509
XVI. Metals, manufactured ...	7,491,636	10,531,166	10,171,607	10,372,019	12,074,821	14,211,581
XVII. Leather, etc. ...	523,565	1,004,822	933,033	1,080,222	1,303,134	1,586,503
XVIII. Wood, etc. ...	1,814,382	2,100,305	2,343,862	2,060,231	2,583,065	3,361,477
XIX. Earthenware, etc. ...	925,101	863,849	855,855	791,705	1,015,313	1,228,122
XX. Paper, etc. ...	1,731,330	2,071,344	2,234,930	2,068,638	2,457,216	2,831,808
XXI. Jewellery, etc. ...	1,065,348	1,261,046	1,102,844	1,203,528	1,428,029	1,755,583
XXII. Instruments, etc. ...	218,437	379,300	380,140	412,547	444,990	504,775
XXIII. Drugs, etc. ...	1,472,162	1,840,933	1,916,680	1,744,023	2,186,005	2,178,600
XXIV. Miscellaneous ...	3,140,345	3,978,018	4,054,282	4,233,687	5,188,246	5,827,932
Grand total	42,433,811	51,809,033	49,799,273	51,171,896	60,014,351	66,967,488

The exports are shewn according to the same classification, and the usual distinction is made between exports of Australian produce and re-exports. It will be seen what

a small proportion of the total exports is made up by re-exports, and that the latter consist largely of specie minted from imported gold.

**COMMONWEALTH EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING
AUSTRALIAN AND THE PRODUCE OF OTHER COUNTRIES,
1901 and 1907 to 1911.**

Classes.	1901.	1907.	1908.	1909.	1910.	1911.
AUSTRALIAN PRODUCE.						
I. Animal foodstuffs, etc. ...	£ 4,104,196	5,726,153	4,841,315	5,473,619	8,791,463	9,015,895
II. Vegetable foodstuffs, etc. ...	4,633,926	6,866,279	4,710,815	8,440,099	11,884,299	11,910,303
III. Beverages (non-alcoholic), etc. ...	2,598	2,810	3,539	3,883	5,826	5,534
IV. Alcoholic liquors, etc. ...	134,630	134,011	112,621	133,992	137,826	167,137
V. Tobacco, etc. ...	5,030	67,612	83,142	76,594	67,226	69,035
VI. Live animals ...	473,601	369,417	263,737	206,485	306,724	298,691
VII. Animal substances, etc. ...	16,764,006	32,011,364	25,431,142	28,069,998	33,128,767	29,714,471
VIII. Vegetable substances, etc. ...	142,060	255,191	231,618	195,951	279,053	245,771
IX. Apparel, etc. ...	42,142	75,562	65,304	78,559	77,217	72,852
X. Oils, etc. ...	843,755	1,259,021	945,113	1,422,710	2,192,992	2,234,584
XI. Paints, etc. ...	620	5,433	3,847	4,682	5,871	6,577
XII. Stones, etc. ...	1,041,974	1,343,791	1,421,304	874,628	943,195	926,655
XIII. Specie ...	8,884,816	5,411,572	9,619,576	4,267,070	1,199,679	8,210,595
XIV. Metals, unmanufactured, ores, etc. ...	8,916,269	14,163,540	11,724,275	10,324,317	10,341,849	10,674,748
XV. Metals, part manufactured	3,802	11,049	25,568	7,570	8,922	10,270
XVI. Metals, manufactured ...	117,662	156,540	225,878	207,893	221,037	252,756
XVII. Leather, etc. ...	660,692	569,556	573,742	524,711	576,918	553,556
XVIII. Wood, etc. ...	666,024	802,194	1,038,256	1,033,336	1,020,917	1,081,582
XIX. Earthenware, etc. ...	6,600	33,053	31,852	14,453	13,284	13,967
XX. Paper, etc. ...	22,171	49,730	64,738	58,583	59,066	68,957
XXI. Jewellery, etc. ...	67,978	149,315	141,654	141,360	135,068	161,553
XXII. Instruments, etc. ...	507	2,766	5,613	6,867	6,922	5,623
XXIII. Drugs, etc. ...	86,299	209,297	212,421	211,297	243,868	255,716
XXIV. Miscellaneous ...	130,418	141,244	142,233	164,194	189,189	218,382
Total	47,741,776	69,816,500	62,118,903	62,843,711	71,836,195	76,205,210

OTHER PRODUCE.

I. Animal foodstuffs, etc. ...	£ 35,291	20,750	20,698	21,872	23,722	25,369
II. Vegetable foodstuffs, etc. ...	80,371	307,707	280,357	201,555	192,832	210,515
III. Beverages (non-alcoholic), etc. ...	43,308	72,647	62,285	82,138	91,514	85,661
IV. Alcoholic liquors, etc. ...	55,732	36,889	31,259	30,736	37,234	40,744
V. Tobacco, etc. ...	61,753	32,752	40,127	52,889	57,133	52,697
VI. Live animals ...	105	5,615	1,170	935	5,335	12,017
VII. Animal substances, etc. ...	10,070	9,565	7,401	3,423	7,363	8,392
VIII. Vegetable substances, etc. ...	17,625	18,688	16,172	19,888	18,483	26,755
IX. Apparel, etc. ...	171,014	203,950	229,070	205,936	200,870	185,412
X. Oils, etc. ...	42,292	42,546	65,324	39,134	38,394	45,960
XI. Paints, etc. ...	15,186	6,330	7,735	6,462	8,135	7,408
XII. Stones, etc. ...	2,043	2,179	2,308	2,941	2,779	1,646
XIII. Specie ...	846,921	1,474,225	660,882	1,099,221	1,047,758	1,639,951
XIV. Metals, ores, etc. ...	9,744	27,036	11,517	6,287	8,463	17,620
XV. Metals, part manufactured	13,806	54,841	20,602	32,866	32,994	24,952
XVI. Metals, manufactured ...	196,384	222,313	213,468	206,004	261,708	266,681
XVII. Leather, etc. ...	13,074	32,692	42,802	52,053	59,653	65,321
XVIII. Wood, etc. ...	32,135	47,791	36,627	60,095	37,290	34,966
XIX. Earthenware, etc. ...	23,337	26,037	15,992	12,328	16,839	15,237
XX. Paper, etc. ...	52,171	52,454	61,177	62,459	75,102	77,951
XXI. Jewellery, etc. ...	54,431	49,051	59,693	63,095	147,493	148,854
XXII. Instruments, etc. ...	13,555	32,108	54,775	55,742	54,125	66,171
XXIII. Drugs, etc. ...	42,976	47,511	48,220	46,766	51,154	49,658
XXIV. Miscellaneous ...	121,122	182,070	202,554	140,280	178,581	166,910
Total	1,954,396	3,007,747	2,192,155	2,475,125	2,654,955	3,277,048

EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING AUSTRALIAN PRODUCE AND THE PRODUCE OF OTHER COUNTRIES, 1901 and 1907 to 1911.—Continued.

Classes.	1901.	1907.	1908.	1909.	1910.	1911.
TOTAL EXPORTS.						
I. Animal foodstuffs, etc. ...	£ 4,139,487	£ 5,746,908	£ 4,862,013	£ 5,495,491	£ 8,815,185	£ 9,040,964
II. Vegetable foodstuffs, etc. ...	4,714,297	7,173,986	4,991,172	8,641,654	12,077,131	12,120,818
III. Beverages (non-alcoholic), etc. ...	45,906	75,457	65,824	86,021	97,340	91,195
IV. Alcoholic liquors, etc. ...	190,362	170,900	143,880	164,728	175,060	207,881
V. Tobacco, etc. ...	66,783	100,364	123,269	129,483	124,359	121,732
VI. Live animals ...	473,706	375,032	264,907	207,420	312,059	310,708
VII. Animal substances, etc. ...	16,764,076	32,020,929	25,438,543	23,973,421	33,136,130	29,722,863
VIII. Vegetable substances, etc. ...	159,685	273,879	247,790	215,839	297,536	272,526
IX. Apparel, etc. ...	213,156	279,512	294,374	284,495	278,087	258,264
X. Oils, etc. ...	886,047	1,301,567	1,010,437	1,461,844	2,231,386	2,280,844
XI. Paints, etc. ...	15,806	11,763	11,082	11,144	14,006	13,985
XII. Stones, etc. ...	1,044,017	1,345,970	1,423,612	877,569	945,974	928,301
XIII. Specie ...	9,731,737	6,885,797	10,480,458	5,366,291	2,247,437	9,850,546
XIV. Metals, unmanufact., ores, etc. ...	8,926,013	14,190,576	11,735,792	10,330,604	10,350,312	10,692,568
XV. Metals, part manufactured ...	17,605	65,890	46,170	40,436	41,916	35,222
XVI. Metals, manufactured ...	313,996	378,853	430,346	413,897	482,745	519,437
XVII. Leather, etc. ...	673,766	602,248	616,544	576,764	636,571	648,877
XVIII. Wood, etc. ...	638,159	849,985	1,074,883	1,063,431	1,058,207	1,116,548
XIX. Earthenware, etc. ...	29,937	59,090	47,944	26,781	30,123	29,204
XX. Paper, etc. ...	74,342	102,184	125,915	121,312	133,169	146,908
XXI. Jewellery, etc. ...	122,409	198,366	201,287	205,045	282,561	310,407
XXII. Instruments, etc. ...	14,062	34,874	60,388	62,609	61,047	71,794
XXIII. Drugs, etc. ...	129,275	256,808	260,641	258,083	295,039	305,374
XXIV. Miscellaneous., ...	251,540	323,314	344,787	304,474	367,770	385,292
Total ...	49,696,172	72,824,247	64,311,058	65,318,836	74,491,150	79,482,258

From the above table it will be seen that there has been a very substantial expansion in the principal divisions of the export trade of the Commonwealth. Compared with 1901 the exports in 1911 of animal foodstuffs, principally butter and meat, shew an increase of 118.68 per cent.; vegetable foodstuffs, principally wheat, shew an increase during the same period of 157.08 per cent.; animal substances—wool, skins, etc.—shew an increase of 77.30 per cent.; oils, fats, and waxes—mainly tallow—an increase of 157.40 per cent.; and wood, etc. (timber) an increase of 59.92 per cent.

§ 8. Movement of Specie and Bullion.

1. **Specie and Bullion.**—The following tables shew the value of gold and silver bullion and specie, including bronze specie, imported and exported during the years 1901 and 1907 to 1911:—

COMMONWEALTH IMPORTS AND EXPORTS OF SPECIE AND BULLION,
1901 and 1907 to 1911.

Items.	1901.	1907.	1908.	1909.	1910.	1911.
IMPORTS.						
Gold—Specie ...	£ 3,710	£ 9,967	£ 14,426	£ 11,566	£ 26,008	£ 25,534
Bullion ...	762,415	1,426,827	950,575	999,884	962,436	1,564,056
Total ...	766,125	1,436,794	965,001	1,011,450	978,444	1,609,570
Silver—Specie ...	158,656	375,937	209,564	32,337	332,054	338,765
Bullion ...	54	498	689	2,294	5,040	4,063
Total ...	158,710	376,435	210,253	34,631	337,094	342,828
Bronze—Specie ...	10,029	20,971	15,098	10,294	16,422	17,183
Grand total ...	984,864	1,834,200	1,190,352	1,056,375	1,331,960	1,969,581

COMMONWEALTH IMPORTS AND EXPORTS OF SPECIE AND BULLION, 1901 AND 1907 TO 1911.—Continued.

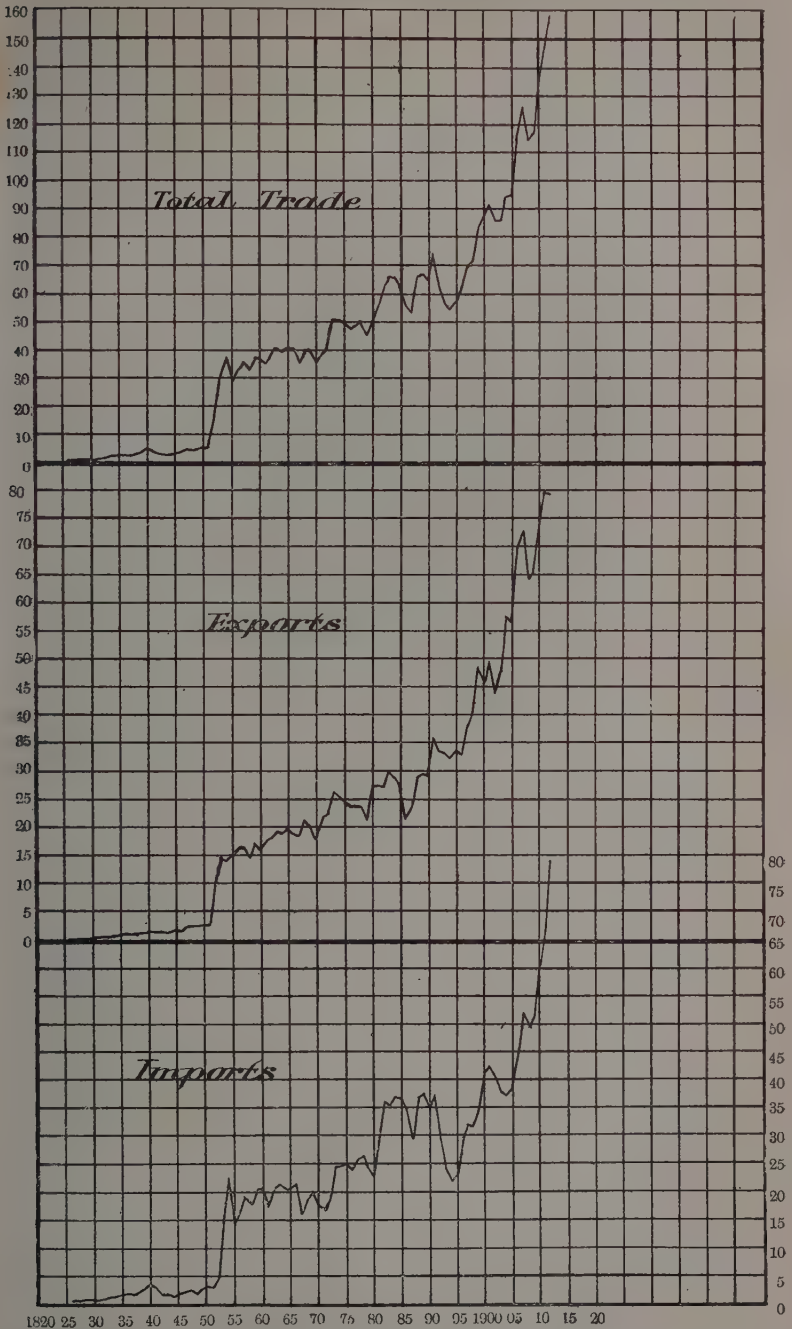
Items		1901.	1907.	1908.	1909.	1910.	1911.
EXPORTS.							
Gold Specie	...	£ 9,708,097	£ 8,857,838	£ 10,438,665	£ 5,349,066	£ 2,178,123	£ 9,829,689
	Bullion	4,616,039*	3,685,466	3,128,073	3,024,085	1,930,660	1,711,093
Total		14,324,076	10,543,304	13,566,738	8,373,151	4,108,783	11,540,782
Silver—Specie	...	23,370	25,667	39,761	16,374	69,134	20,823
	Bullion	922,443†	616,197	581,689	289,908	457,180	485,447
Total		945,813	641,864	621,470	306,282	526,314	506,270
Bronze—Specie		330	2,292	2,012	851	180	34
Total {	Australian produce	14,423,298	9,713,190	13,526,398	7,580,158	3,587,201	10,403,796
	Other produce	846,921	1,474,270	663,822	1,100,126	1,048,076	1,643,290
Grand total		15,270,219	11,187,460	14,190,220	8,680,284	4,635,277	12,047,086

* Includes gold contained in matte. The value of gold contained in matte exported during 1907 was £350,601, during 1908, £761,107, during 1909, £524,183, during 1910, £349,924, and during 1911, £437,761. † Includes silver contained in matte. The value of silver contained in matte exported during 1907 was £576,959, during 1908, £489,460, during 1909, £370,329, during 1910, £296,228, and during 1911, £219,971.

COMMONWEALTH IMPORTS AND EXPORTS OF SPECIE AND GOLD AND SILVER BULLION FROM AND TO PRINCIPAL COUNTRIES, 1911.

Country.	Imports.			Exports.		
	Specie.	Bullion.	Total.	Specie.	Bullion.	Total.
	£	£	£	£	£	£
United Kingdom ...	348,973	4,209	353,182	642,240	946,065	1,588,305
Ceylon ...	...	...	...	5,115,000	168,750	5,283,750
Fiji ...	...	...	...	90,320	13	90,333
Hong Kong ...	...	...	...	466,657	400	467,057
India ...	...	...	...	1,594,800	1,080,300	2,675,100
New Zealand ...	15,000	1,518,617	1,533,617	760,000	162	760,162
Papua ...	...	58,763	58,763	560	...	560
South African Union ...	...	...	...	305,000	...	305,000
Straits Settlements ...	100	...	100	501,997	...	501,997
Other Countries ...	...	...	...	5	...	5
Total British Countries	364,073	1,581,589	1,945,662	9,476,579	2,195,690	11,672,269
China ...	10,000	...	10,000	280,000	850	280,850
Germany ...	...	...	...	22,155	...	22,155
Pacific Islands ...	6,888	6,051	12,939	69,372	...	69,372
Other Countries ...	521	459	980	2,440	...	2,440
Total Foreign Countries	17,409	6,510	23,919	373,967	850	374,817
Grand total ...	381,482	1,588,099	1,969,581	9,850,546	2,196,540	12,047,086

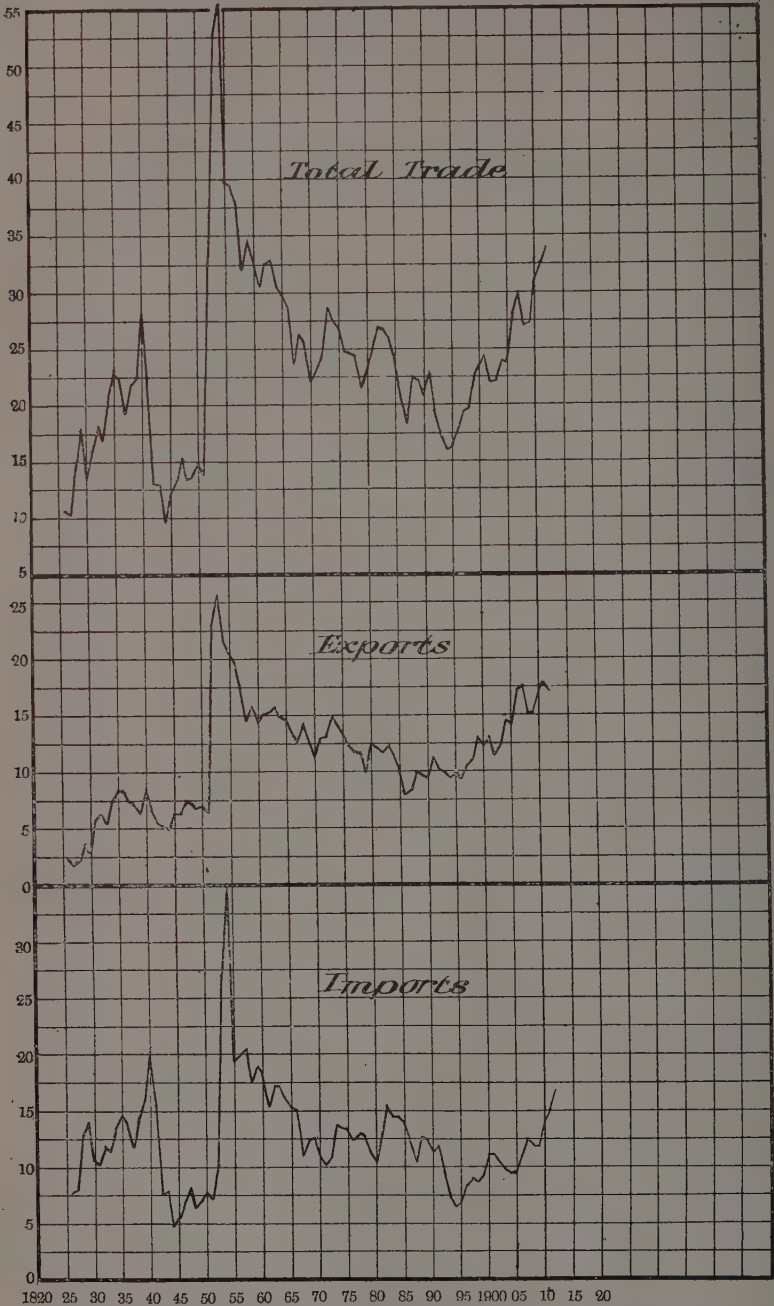
GRAPHS SHEWING VALUES OF TOTAL TRADE, EXPORTS, AND IMPORTS OF
COMMONWEALTH, 1826 to 1912.



(See pages 593 and 594.)

EXPLANATION OF GRAPHS.—The base of each square represents an interval of five years, and the vertical height five million pounds sterling for Imports and Exports, and ten million pounds sterling for Total Trade. The scales for Total Trade and Exports are on the left and that for Imports on the right hand side of the graphs.

GRAPHS SHEWING THE VALUES PER HEAD OF POPULATION OF TOTAL TRADE,
EXPORTS AND IMPORTS OF COMMONWEALTH, 1826 to 1912.



(See pages 593 and 594).

EXPLANATION OF GRAPHS.—The base of each square represents an interval of five years, and the vertical height fifty shillings per head of the population. The basic lines of Imports and Exports are *nil* per head, and that of Total Trade is five pounds sterling per head.

2. **Imports of Bullion and Specie.**—Of the total imports of bullion and specie into the Commonwealth during 1911, 77.11 per cent. was in the form of gold bullion, and was received almost entirely from New Zealand for the purpose of minting.

3. **Exports of Bullion and Specie.**—Of the total exports of bullion and specie during 1911 gold represented 95.78 per cent., 81.58 per cent. being in the form of specie, and 14.20 per cent. bullion.

The countries which appear as the largest recipients of gold from Australia are Ceylon, India, United Kingdom, New Zealand, Straits Settlements, Hong Kong, and the South African Union, in the order named, but as large amounts of gold, recorded as exported to Ceylon, are shipped *under option*, and may be despatched thence to any other country, the actual amount received by each country cannot be stated. Moreover, the dimensions of the gold shipments from Australia to particular countries are without any significance regarding the business transactions between Australia and those countries. Shipments of gold merely represent a contribution towards the liquidation of liabilities or the establishment of credit abroad; and Great Britain being the principal creditor and banker, shipments of gold from the Commonwealth are for the most part directed by London bankers to suit their requirements.

§ 9. Effects of Prices on the Values of Exports.

1. **Significance of Price in Totals.**—In comparing the value of exports from, and also imports into, any country for a series of years the question naturally arises as to how much any variation in the aggregate value is due to fluctuations in prices, and how much to increase or decrease of actual quantities, for, in aggregates expressed only in value—the only possible method when the commodities differ—the two sources of variation are confused.

The scheme of comparison followed hereinafter is that of the British Board of Trade. This is to select all such articles of export as are recorded by units of quantity, and to apply to the quantities exported during each year the average price per unit ruling in some year, arbitrarily taken for the purposes of comparison as the basic year. The ratio which the total actually recorded for the year under review bears to the total obtained by applying to the quantities of the year under review the average prices ruling during the basic year, may be called the “price-level” of the latter—as compared with the former—for the group of commodities considered, and may be taken (so it is assumed in the method of the British Board of Trade) as a measure of the effect of the change of price in the intervening period. Since the value of the articles used in the calculations represents as much as 84 per cent. of all exports during 1911—after excluding specie and gold bullion, which are not subject to price changes—a fairly extensive basis is afforded on which to found an estimate of the effect of prices over the full range of exports.

2. **Effect of Prices.**—The following table shews the values of exports as actually recorded in each year, together with the values computed on the assumption that the prices of 1901 were maintained. The table also shews the yearly “price-levels,” based upon the results so ascertained.

This table obviously furnishes a measure of the influence of prices on the value of exports of each year since 1901. Column IV.,—values computed on 1901 prices—represents the volume of exports (less specie and gold bullion), expressed in the common

denomination of value, and from the figures therein it will be seen that, had the prices of 1901 remained constant, the value of the exports of merchandise during the year 1911, for example, would have been £58,085,563 only, instead of £67,920,619—the value actually recorded. The difference between these amounts (£9,835,056) results from a rise of 16.9 per cent. (i.e., from 1000 to 1169) in the price of commodities for the period intervening between 1901 and 1911.

It will be seen from the column of "Price Levels" that prices as indicated by the Commonwealth exports rose steadily from the beginning of the decade to the year 1907. The financial crisis in the United States of America caused a pronounced fall in the prices of 1908. Owing to the large proportion of the aggregate value of exports represented by wool and wheat, any change in the price of these commodities has a marked effect on the index numbers for the total group of exports, and it is to their influence that the fall of prices in 1911 is mainly due.

EFFECT OF PRICES ON THE VALUE OF COMMONWEALTH EXPORTS AND EXPORT

PRICE-LEVELS FOR THE PERIOD 1901 to 1911.

(BASIC YEAR, 1901.)

Year.	Exports of Specie and Gold Bullion.	Other Exports.		Total Exports (including Specie and Gold Bullion).		Price Levels. ¹ Year 1901 = 1000.
		Values as Recorded.	Values Computed on 1901 Prices.	Values as Recorded.	Values Computed on 1901 Prices.	
I.	II. £	III. £	IV. £	V. £	VI. £	VII.
1901 ...	14,347,776	35,348,396	35,348,396	49,696,172	49,696,172	1000
1902 ...	14,568,640	29,346,447	27,375,976	43,915,087	41,944,616	1072
1903 ...	18,408,702	29,841,410	26,697,120	48,250,112	45,105,822	1118
1904 ...	16,914,691	40,571,224	36,139,840	57,485,915	53,054,531	1123
1905 ...	10,977,111	45,863,924	38,465,210	56,841,035	49,442,321	1192
1906 ...	16,895,059	52,842,704	42,295,310	69,737,763	59,190,369	1249
1907 ...	10,571,263	62,252,984	47,557,141	72,824,247	58,128,404	1309
1908 ...	13,608,531	50,702,527	43,072,809	64,311,058	56,681,340	1177
1909 ...	8,390,376	56,928,460	46,973,200	65,318,836	55,363,576	1212
1910 ...	4,178,097	70,313,053	56,571,308	74,491,150	60,749,405	1243
1911 ...	11,561,639	67,920,619	58,085,563	79,482,258	69,647,202	1169

1. These are index numbers for the total group of exports, excluding specie and gold bullion.

3. Influence of Quantity and Price on Total Increased Value of Exports.—The estimated actual and relative effects of the influence of—(i.) increase or decrease in the exports of specie and gold bullion, (ii.) increase or decrease of *quantities* of other exports, (iii.) variation of prices on the value of the exports of each year compared with 1901, are shewn below.

From the following figures it will be seen that exports of 1911, for example, of specie and gold bullion compared with 1901, shew a decrease of 19.42 per cent., other exports (merchandise) shew an increase of 64.30 per cent. in quantities, and an increase of 16.95 per cent. in the group-prices. These several influences effect an aggregate increase of £29,786,086, or 59.95 per cent., over 1901 as follows:—By increased quantities of merchandise, £22,737,167 (76.33 per cent.); by increased prices, £9,835,056 (33.02 per cent.); accompanied by a decrease of £2,786,137 (19.42 per cent.) in the exports of specie and gold.

ANALYSIS OF INFLUENCE OF QUANTITY AND PRICE ON INCREASE OR DECREASE
IN COMMONWEALTH EXPORTS, 1902 to 1911, COMPARED WITH 1901.

Year.	Particulars.	Variation above (+) or below (—) 1901 Exports due to change in:—			Total Variation above (+) or below (—) Value of 1901 Exports.
		Export of Specie and Gold.	Quantity of Export other than Specie and Gold.	Prices of Export other than Specie and Gold.	
1902.	Variation, actual £	+220,864	—7,972,420	+1,970,471	—5,781,085
	Relative magnitude of variation. Total				
	variation taken as 100	+3.82	—137.90	+34.08	—100
	Variation, per cent.	+1.54	—22.55	+7.20	—11.63
1903.	Variation, actual £	+4,060,926	—8,651,276	+3,144,290	—1,446,060
	Relative magnitude of variation. Total				
	variation taken as 100	+280.81	—598.25	+217.44	—100
	Variation, per cent.	+28.30	—24.47	+11.78	—2.91
1904.	Variation, actual £	+2,566,915	+791,444	+4,431,384	+7,789,743
	Relative magnitude of variation. Total				
	variation taken as 100	+32.95	+10.16	+56.89	+100
	Variation, per cent.	+17.90	+2.24	+12.26	+15.67
1905.	Variation, actual £	—3,370,665	+3,116,814	+7,398,714	+7,144,863
	Relative magnitude of variation. Total				
	variation taken as 100	—47.18	+43.62	+103.56	+100
	Variation, per cent.	—23.48	+8.82	+19.24	+14.37
1906.	Variation, actual £	+2,547,283	+6,946,914	+10,547,394	+20,041,591
	Relative magnitude of variation. Total				
	variation taken as 100	+12.71	+34.66	+52.63	+100
	Variation, per cent.	+17.76	+19.65	+24.94	+40.32
1907.	Variation, actual £	—3,776,513	+12,208,745	+14,685,843	+23,128,075
	Relative magnitude of variation. Total				
	variation taken as 100	—16.32	+52.78	+63.54	+100
	Variation, per cent.	—26.32	+34.55	+30.90	+46.56
1908.	Variation, actual £	—739,245	+7,724,413	+7,629,718	+14,614,886
	Relative magnitude of variation. Total				
	variation taken as 100	—5.06	+52.85	+52.21	+100
	Variation, per cent.	—5.15	+21.85	+17.72	+29.43
1909.	Variation, actual £	—5,957,400	+11,624,804	+9,955,260	+15,622,664
	Relative magnitude of variation. Total				
	variation taken as 100	—38.13	+74.40	+63.73	+100
	Variation, per cent.	—41.52	+32.89	+21.19	+31.43
1910.	Variation, actual £	—10,169,679	+21,222,912	+13,741,745	+24,794,978
	Relative magnitude of variation. Total				
	variation taken as 100	—41.01	+85.59	+55.42	+100
	Variation, per cent.	—70.88	+60.04	+24.32	+49.90
1911.	Variation, actual £	—2,786,137	+22,737,167	+9,835,056	+29,786,086
	Relative magnitude of variation. Total				
	variation taken as 100	—9.35	+73.33	+33.02	+100
	Variation, per cent.	—19.42	+64.30	+16.95	+59.95

§ 10. External Trade of Australia and other Countries.

1. **Essentials of Comparisons.**—Direct comparisons of the external trade of any two countries are possible only when the general conditions prevailing therein, and the scheme of record, are sensibly identical. For example, in regard to the mere matter of record, it may be observed that in one country the value of imports may be the value at the port of shipment, while in another the cost of freight, insurance, and charges may be added thereto. Or again, the values of imports and exports in the one may be declared by merchants, whereas in the other they may be the official prices, fixed from time to time by a commission constituted for the purpose. The figures relating to the external trade of any country are also affected in varying degree by the extent to which they include transit or re-export trade. Including bullion and specie, the transit trade of Belgium, for example, represents approximately 40 per cent. of the gross trade recorded; of Switzerland, 45 per cent.; of France, 20 per cent.; and of the United

Kingdom, 15 per cent.; whereas in Australia the same element represents only 4 per cent., and in New Zealand even less.

2. "Special Trade" of Various Countries.—Special trade may be defined, agreeably to the practice of the British Board of Trade, as (a) imports entered for consumption in the country (as distinguished from imports for transshipment or re-export) and (b) exports of domestic products.

In the following table the figures relate, as nearly as is possible, to imports entered for consumption in the various countries quoted, and to exports of their domestic products. It is to be noted, however, that these figures do not unequivocally denote the same thing throughout, since, in the United Kingdom and other manufacturing countries, raw or partly manufactured materials are imported as for home consumption, and, after undergoing some process of manufacture or further modification, are re-exported as domestic production, and further, the statistical records of many countries do not distinguish between bullion and specie imported for the use of the particular country (home consumption) and the amount in transit, nor between the exports of that produced within the country and that re-exported. Nevertheless a comparison of this character reveals approximately the extent of the external trade which otherwise would not be manifest.

From the following table it may be seen that, for the particular years indicated, the value of the total trade per inhabitant was greatest in Belgium (£40 19s. 10d. per head); the next country in order of value per inhabitant was New Zealand (£37 10s. 4d. per head), followed by Switzerland (£32 11s. 3d. per head). Australia comes fourth (£32 11s. 2d. per head), and is some way in advance of the next country, viz., the Argentine Republic (£25 2s. 6d. per head):—

TRADE OF VARIOUS COUNTRIES (IMPORTS FOR HOME CONSUMPTION AND EXPORTS OF DOMESTIC PRODUCTS, INCLUDING BULLION AND SPECIE) FOR LATEST AVAILABLE YEAR.

Country.	Year ended.	Trade.			Trade per Inhabitant		
		Imports.	Exports.	Total.	Im-ports.	Ex-ports.	Total.
		£	£	£	£ s. d.	£ s. d.	£ s. d.
C'WEALTH OF AUSTRALIA*	31/12/11	63,690,440	75,112,852	138,803,292	14 3 8	16 14 7	30 18 3
	31/12/12	75,112,852	76,115,486	151,228,338	16 3 6	16 7 8	32 11 2
United Kingdom*	31/12/11	583,361,816	454,119,298	1,037,481,114	12 17 7	10 0 7	22 18 2
	31/12/12	637,654,306	487,434,002	1,125,088,308	13 19 0	10 13 5	24 12 5
Canada ...	31/3/12	117,899,000	60,463,000	178,362,000	16 3 10	8 7 6	24 11 4
New Zealand ...	31/12/11	19,299,287	18,781,898	38,081,185	19 0 3	18 10 1	37 10 4
United States of America	30/6/12	355,220,400	475,487,000	830,707,400	3 14 6	4 19 7	8 14 1
Argentine Republic ...	31/12/10	77,760,000	74,859,000	152,619,000	12 16 0	12 6 6	25 2 6
Austria-Hungary ...	"	120,665,000	104,147,000	224,812,000	2 8 10	2 2 2	4 11 0
Belgium ...	"	170,598,000	136,297,000	306,895,000	22 15 9	18 4 1	40 19 10
Brazil ...	"	47,587,000	62,628,000	110,215,000	2 4 3	2 18 3	5 2 6
Denmark ...	"	32,403,000	27,193,000	59,596,000	11 16 10	9 18 8	21 15 6
France ...	"	308,155,000	264,936,000	568,091,000	7 14 2	6 14 8	14 8 10
German Empire ...	"	457,742,000	375,840,000	833,582,000	7 2 5	5 16 11	12 19 4
Italy ...	"	129,839,000	83,199,000	213,038,000	3 14 6	2 7 9	6 2 3
Japan ...	"	51,207,000	49,846,000	101,053,000	1 0 3	0 19 8	1 19 11
Norway ...	"	21,800,000	14,903,000	36,703,000	9 3 2	6 5 2	15 8 4
Portugal ...	31/12/09	14,571,000	6,968,000	21,539,000	2 14 5	1 6 0	4 0 5
Spain ...	31/12/10	40,001,000	38,821,000	78,822,000	2 1 0	1 19 10	4 0 10
Sweden ...	"	37,312,000	32,936,000	70,248,000	6 15 8	5 19 9	12 15 5
Switzerland ...	"	71,516,000	48,965,000	120,481,000	19 6 7	13 4 8	32 11 3
Uruguay ...	"	8,573,000	8,680,000	17,253,000	7 16 7	7 18 6	15 15 1

* Preliminary figures.

3. External Trade as a Measure of Prosperity.—External trade is not necessarily a measure of the prosperity of a country. Comparisons can be accepted as furnishing satisfactory indications of the relative progress or welfare of different countries, only when taken together with all other facts that should be considered in this connection. It is, for example, obvious that the external trade of a community depends not only upon the aggregate of its requirements, but also upon the extent to which it fails to supply requirements from its own resources. A community largely self-contained, for example, may have but a small external trade per head, and yet, by virtue of its capacity to produce and manufacture its own raw material, may actually enjoy greater prosperity and a higher standard of living than another country whose external trade per head is

much greater. The same observation applies equally to comparisons of the trade of the same country at different periods. A young country, the industries and export trade of which are mainly connected with raw or natural products, may, for example, through internal development, find the growth of its external trade diminishing per head of population without necessarily suffering any real diminution in the well-being of its people. And it is further obvious that circumstances may arise when enlargement of both imports and exports is actually a consequence of temporary economic difficulties. For example, in 1903, owing to shortage in the local supply, it became necessary to *import* wheat and flour into Australia to the value of £2,556,968, and to meet the charges for this by equivalent *exports*, the effect, considered *per se*, being to enlarge both. In this case the increase is not an evidence of prosperity.

4. Australian Trade Evidence of Prosperity.—Despite the above suggestions regarding the necessity of caution so as to avoid hasty inferences based upon aggregate trade, a consideration of its general characteristics over a number of years, and of its marked development, will suffice to shew that Australian affairs are progressing rapidly and most favourably, especially when it is taken into account that there are no counterbalancing elements of disadvantage.

§ 11. Trade of the United Kingdom with Australia.

1. General.—The failure of the United Kingdom to maintain the position formerly held by her in the import trade of Australia has, during recent years, become a matter of more than ordinary interest in both countries. In June, 1905, Mr. R. J. Jeffray was sent here as a "Commissioner of the Advisory Committee on Commercial Intelligence of the British Board of Trade," to investigate the conditions and prospects of British trade with this country, and early in 1908 Mr. Ben H. Morgan was sent on a similar mission by the Manufacturers' Association of Great Britain, and in particular to report on:—(i.) The extent and possibilities of the market, with a view to (a) increasing export trade, (b) establishing branch factories inside the tariffs; (ii.) the extent and condition of local industries; (iii.) the nature and condition of foreign competition; (iv.) transport services, with special reference to shipping "rings" and "conferences"; (v.) the operation of local tariffs and effects of preferences. In December, 1908, a permanent Commissioner of the British Board of Trade arrived in Australia for the purpose of advising British manufacturers of the particular requirements of the Australian markets, with a view to improving the trade between the Commonwealth and the United Kingdom.

In a previous issue of this work (No. 1, 1907) reference was made to the report of Mr. Jeffray, in which he gave the following principal causes of the success of the foreign manufacturer in the Australian market:—(i.) Greater promptitude and attention to orders; (ii.) greater readiness to adapt their goods to the requirements of customers; (iii.) more efficient representation in Australia; (iv.) better package of goods; (v.) more attractive appearance of goods; (vi.) lower freights.

Mr. Morgan reports "that the most important reason for the growth of foreign trade in Australia is that the foreign manufacturer is able to quote lower prices than the British manufacturer for goods of equal value." That the foreign manufacturer is able to do this, is, he contends, due to the following, viz.:—(i.) *Protection*. By virtue of protection for his home market "the foreign manufacturer can depend on a definite consumption therein, and is thus able to produce in larger quantities, and therefore more cheaply." (ii.) *Lower shipping rates and raw materials*. "Direct shipping services have been established with foreign countries, who carry goods generally at lower rates than British shipping companies carry British goods, and that, following the development of manufacturing industries in foreign countries and the establishment of those cheap shipping facilities, the markets for raw materials are being diverted to those countries . . . and by carrying at lower rates, give their manufacturers an advantage in price in such raw materials." After quoting many instances of goods being charged

freights from Liverpool to Australia much above those charged on similar goods from New York to Hamburg *via* Liverpool to Australia, Mr. Morgan says:—"This shipping question is one of vital interest to manufacturers, and the time has come when they must, if they are to retain their position in export markets, interest themselves directly in freight matters, instead of leaving them as heretofore to merchants and shipping agents."

Mr. Wickes, addressing the British delegates attending the seventh Congress of the Chambers of Commerce of the Empire, alluding to freights, said:—"I doubt if there is any question which so illustrates the want of organisation among our commercial community," and he suggested that there should be a keener study of freight rates from other parts of the world, and also a closer co-operation of British manufacturers, for the more economical distribution of their manufactures. In subsequent reports, Mr. Wickes strenuously advocates more direct representation of British manufacturers in Australia.

2. Proportion of Trade from United Kingdom.—The percentages given in the following table shew the proportions of the imports into Australia from the United Kingdom, and from other countries mentioned, during each of the years 1886 to 1911:—

**PROPORTION OF COMMONWEALTH IMPORT TRADE FROM VARIOUS COUNTRIES,
1886 to 1911.**

Year.	Percentage Proportions from—					Year.	Percentage Proportions from—				
	United K'dom.	British Poss'ns.	Germ'y.	United States.	Total Foreign C'tries.		United K'dom.	British Poss'ns.	Germ'y.	United States.	Total Foreign C'tries.
1886	73.37	11.23	2.05	6.11	15.40	1899	61.85	11.75	6.07	13.00	26.40
1887	72.26	12.50	2.28	5.37	15.24	1900	61.28	11.28	6.54	12.16	27.44
1888	71.62	12.03	2.71	6.48	16.35	1901	59.47	11.22	6.59	13.80	29.31
1889	68.98	13.45	3.65	6.67	17.57	1902	58.64	13.22	6.53	12.27	28.14
1890	68.08	12.66	4.77	6.54	19.26	1903	52.51	13.17	6.24	16.84	34.32
1891	70.15	11.40	4.53	6.79	18.45	1904	60.68	12.22	7.17	12.40	27.10
1892	70.74	11.37	4.32	6.04	17.89	1905	60.17	14.04	6.42	11.70	25.79
1893	72.78	12.14	3.40	4.98	15.08	1906	59.39	15.09	7.16	10.36	25.52
1894	71.92	11.96	3.78	5.39	16.12	1907	61.59	12.93	6.85	11.33	25.48
1895	71.62	11.46	4.42	5.95	16.92	1908	60.10	12.83	7.05	12.13	27.07
1896	68.28	10.74	5.31	8.59	20.98	1909	60.92	13.45	6.51	9.78	25.63
1897	66.22	10.72	5.75	10.10	23.06	1910	61.06	13.11	6.80	10.82	25.83
1898	66.62	10.88	5.86	10.16	22.50	1911	58.98	12.86	6.63	11.57	28.16

In order to draw accurate conclusions from the above table, however, special attention must be given to the nature of imports from the United States, since the imports from that country have in some years been increased by imports of breadstuffs, a trade in which the United Kingdom could not participate. The years affected by the imports of breadstuffs were 1886, 1889, 1896, 1897, and 1903. Increased imports of such items as kerosene oil and timber also tend to increase the proportion of imports from the United States without any prejudicial effect on the trade of the United Kingdom. Similar modification is not necessary in regard to Germany, as the nature of the imports from that country is substantially the same as from the United Kingdom.

It has already been pointed out in this chapter that, prior to the year 1905, imports into the Commonwealth were recorded only against the country whence they were directly imported. Although the values of direct imports do not afford satisfactory data, it is necessary for any comparison extending further back than 1905 to use such figures. These figures are unsatisfactory on account of the varying proportions of indirect trade.

In order to furnish a comparison free from the influence of such trade as, from its nature, is not open to the United Kingdom, the following table, shewing the direct imports during the years 1886, 1906, 1910 and 1911 of the principal classes of goods which enter largely into the trade of the countries named, has been prepared. It may be mentioned that the imports for the year 1886 were extracted from the "Statistical Registers" of the several States for a comparison—published in a previous issue—with the year 1906, and as their compilation involved a large amount of labour they are again utilised for comparison with the year 1911.

PRINCIPAL DIRECT IMPORTS INTO THE COMMONWEALTH FROM THE UNITED KINGDOM, GERMANY, AND THE UNITED STATES, 1886, 1906, 1910 and 1911.

Nature of Imports.	Year.	United Kingdom.	Germany.	United States.	All Countries.
		£	£	£	£
Foodstuffs of animal origin ...	1886	348,950	5,603	70,959	674,296
	1906	293,950	24,319	146,781	697,830
	1910	360,772	37,737	210,707	873,697
	1911	326,971	51,585	206,267	816,915
Alcoholic liquors ...	1886	1,801,200	82,185	82,730	2,126,877
	1906	1,053,154	109,426	24,367	1,388,671
	1910	1,297,598	149,661	12,357	1,654,237
	1911	1,446,351	181,730	17,110	1,920,824
Apparel, textiles, etc. (incl. boots)	1886	9,845,182	54,350	15,336	10,316,989
	1906	11,066,201	418,776	221,362	13,508,844
	1910	14,193,599	444,592	267,028	17,438,605
	1911	14,794,080	489,784	354,612	17,840,496
Metals unmanufactured and partly manufactured* ...	1886	403,809	2,241	...	490,950
	1906	696,331	62,945	34,927	927,785
	1910	827,854	101,274	44,217	1,229,267
	1911	916,297	70,042	57,819	1,455,764
Manufactures of metals (including machinery) ...	1886	4,616,924	94,832	311,342	5,190,901
	1906	5,144,912	926,314	1,379,662	7,932,675
	1910	7,991,225	1,154,638	2,276,057	12,074,821
	1911	8,965,810	1,218,431	2,838,516	14,211,581
Paper and stationery ...	1886	1,260,531	21,038	39,700	1,340,627
	1906	1,207,729	261,684	288,509	1,888,474
	1910	1,659,385	258,241	223,431	2,457,216
	1911	1,871,746	312,329	209,429	2,831,808
Jewellery, timepieces, fancy goods	1886	659,833	24,206	57,477	789,127
	1906	740,850	140,950	59,151	1,045,164
	1910	916,609	205,919	90,825	1,428,029
	1911	1,147,546	250,876	113,323	1,755,583
Earthenware, cements, etc. ...	1886	755,907	78,762	24,711	938,476
	1906	316,252	227,390	37,344	688,510
	1910	530,554	253,028	52,208	1,015,313
	1911	600,210	330,490	54,139	1,228,122
Drugs, chemicals, fertilisers, etc.	1886	511,216	8,660	33,382	766,243
	1906	887,325	193,615	82,789	1,732,543
	1910	939,580	152,401	90,773	2,186,005
	1911	915,588	189,458	99,587	2,178,600
Leather, and mfs. thereof and substitutes therefor, including indiarubber ...	1886	285,601	6,357	53,588	363,332
	1906	682,238	70,028	116,356	924,968
	1910	923,851	125,725	99,211	1,303,134
	1911	1,053,853	188,249	152,726	1,586,503
Total above-mentioned imports ...	1886	20,489,153	378,234	689,225	22,937,818
	1906	22,088,942	2,435,447	2,391,248	30,685,464
	1908	24,558,163	2,638,279	3,044,691	34,444,436
	1909	25,650,092	2,507,669	2,511,450	35,275,485
	1910	29,641,027	2,983,216	3,366,814	41,660,324
	1911	32,038,457	3,282,974	4,103,528	45,826,196
Total imports (less bullion and specie) ...	1886	24,974,939	699,075	2,087,213	33,885,284
	1906	26,437,768	3,202,990	4,633,331	42,413,995
	1908	29,703,021	3,508,845	6,039,499	48,608,921
	1909	31,129,940	3,329,641	5,002,923	50,115,521
	1910	36,273,169	3,777,669	6,494,588	58,682,391
	1911	39,145,829	4,427,153	7,747,470	64,934,538

* Mainly pig iron and bar and rod iron.

PERCENTAGE ON TOTAL COMMONWEALTH IMPORTS OF PRINCIPAL *DIRECT* IMPORTS FROM UNITED KINGDOM, GERMANY, AND UNITED STATES, 1886, 1906, 1910 and 1911.

Nature of Imports.	Year.	United Kingdom.	Germany.	United States.	All Countries
Foodstuffs of animal origin ...	1886	51.75	0.83	10.52	100
	1906	42.12	3.48	21.02	100
	1910	41.29	4.32	24.12	100
	1911	40.02	6.31	25.25	100
	1886	84.69	8.86	3.89	100
Alcoholic liquors ...	1906	75.84	7.88	1.75	100
	1910	78.44	9.05	0.75	100
	1911	75.30	9.46	0.89	100
	1886	95.44	0.53	0.15	100
	1906	81.93	3.10	1.64	100
Apparel, textiles, etc. (including boots)	1910	81.39	2.55	1.53	100
	1911	82.93	2.75	1.99	100
	1886	93.72	0.52	—	100
Metals unmanufactured and partly manufactured ...	1906	75.06	6.78	3.76	100
	1910	63.86	7.81	3.41	100
	1911	62.95	4.81	3.97	100
	1886	88.93	1.83	6.00	100
	1906	64.85	11.68	17.39	100
Manufactures of metals ...	1910	66.18	9.56	18.85	100
	1911	63.09	8.57	19.97	100
	1886	94.03	1.57	2.96	100
	1906	65.69	14.23	15.69	100
	1910	67.52	10.51	9.09	100
Paper and stationery ...	1911	66.10	11.03	7.39	100
	1886	83.62	3.07	7.28	100
	1906	70.89	13.48	5.66	100
	1910	64.19	14.42	6.36	100
	1911	65.36	14.29	6.45	100
Jewellery, timepieces, and fancy goods	1886	80.55	8.89	2.63	100
	1906	45.93	33.03	5.42	100
	1910	52.26	24.92	5.14	100
	1911	48.87	26.91	4.41	100
	1886	66.71	1.13	4.36	100
Earthenware, cements, etc. ...	1906	51.22	11.18	4.78	100
	1910	42.98	6.97	4.15	100
	1911	42.02	8.70	4.57	100
	1886	78.60	1.75	15.30	100
	1906	73.75	7.60	12.58	100
Leather and mfs. thereof, and substitutes therefor, including indiarubber	1910	70.90	9.65	7.61	100
	1911	66.42	11.86	9.63	100
Total above-mentioned imports ...	1886	89.31	1.65	3.01	100
	1906	71.98	7.94	7.79	100
	1908	71.29	7.66	8.84	100
	1909	72.70	7.10	7.12	100
	1910	71.04	6.91	8.07	100
	1911	69.91	7.16	8.95	100
Total imports (less bullion and specie)	1886	73.71	2.06	6.16	100
	1906	62.34	7.55	10.92	100
	1908	61.11	7.32	12.42	100
	1909	62.10	6.64	9.98	100
	1910	61.82	6.44	11.07	100
	1911	60.28	6.82	11.93	100

The foregoing table shews that the share of the United Kingdom, as indicated by the records according to "Country of Shipment," in the trade of those classes of goods enumerated—representing over 70 per cent. of the total imports from that country—has declined from 89.31 per cent. of the whole in 1886 to 69.91 per cent. in 1911. The value of these imports from the United Kingdom has increased from £20,489,153 in 1886 to only £32,038,457 in 1911, or by 56.39 per cent., while the total value of similar imports

has increased from £22,937,818 to £45,826,196, or by 99.78 per cent. Had the same proportion of the total trade been shipped from the United Kingdom during 1911 as in 1886 it would have represented £40,927,377 instead of £32,038,457.

The following table gives an analysis of the imports during the years 1907-1911 according to the countries of origin of the goods, and has been extended to include the products of Belgium and France. (See subsequent section dealing with "Preference.")

IMPORTS INTO THE COMMONWEALTH OF PRODUCTS OR MANUFACTURES OF THE UNITED KINGDOM, BELGIUM, FRANCE, GERMANY, AND THE UNITED STATES OF AMERICA DURING THE YEARS 1907 TO 1911.

Nature of Imports.	Year.	United Kingdom.	Belgium	France.	Germany.	U.S. of America.	All Countries
		£	£	£	£	£	£
Foodstuffs of animal origin	1907	177,767	800	4,637	7,859	153,599	688,642
	1908	327,047	348	5,103	9,983	227,908	834,542
	1909	309,642	4,505	5,431	6,737	181,435	751,044
	1910	313,066	1,141	3,806	6,414	242,427	873,697
	1911	266,740	885	3,199	8,354	226,495	816,915
Alcoholic liquors, etc.	1907	1,015,026	3,175	271,295	71,921	26,043	1,556,224
	1908	1,007,600	914	281,529	77,379	18,182	1,575,151
	1909	956,882	1,637	250,042	80,283	13,053	1,496,952
	1910	1,052,003	1,502	287,106	95,039	17,330	1,654,237
	1911	1,138,158	327	443,587	112,904	22,758	1,920,824
Apparel (including boots), textiles, etc.	1907	9,900,952	138,685	889,545	1,344,415	444,594	15,367,604
	1908	8,791,471	131,317	786,394	1,252,337	349,885	13,844,687
	1909	9,231,968	155,078	857,808	1,299,041	355,768	14,765,738
	1910	10,896,368	204,370	864,898	1,446,075	429,517	17,438,605
	1911	11,462,927	235,317	861,393	1,608,348	515,806	17,840,496
Metals unmanufactured or partly manufactured, excluding gold and silver bullion	1907	823,259	57,818	2,124	112,818	46,258	1,133,231
	1908	665,128	62,685	3,995	130,627	61,026	976,307
	1909	667,327	73,495	2,447	116,017	50,015	971,616
	1910	821,626	125,752	2,882	198,946	44,993	1,296,309
	1911	928,172	150,203	2,616	230,180	58,691	1,519,133
Manufactures of metals	1907	6,767,768	129,686	29,779	1,184,232	2,022,584	10,531,166
	1908	6,550,743	148,692	44,185	1,142,443	1,938,008	10,171,607
	1909	6,786,806	137,710	47,947	1,190,998	1,732,858	10,372,019
	1910	7,491,624	159,095	48,528	1,369,378	2,460,278	12,074,821
	1911	8,507,499	281,070	57,977	1,724,344	3,029,091	14,211,581
Paper and stationery	1907	1,199,123	22,273	10,351	317,544	326,779	2,071,344
	1908	1,217,008	31,923	13,656	310,006	292,426	2,234,930
	1909	1,250,166	23,800	14,889	236,970	231,215	2,098,638
	1910	1,448,938	31,726	17,974	248,102	275,181	2,457,216
	1911	1,651,715	39,638	22,148	311,030	309,015	2,831,508
Jewellery, timepieces and fancy goods	1907	516,552	48,170	109,515	239,363	131,750	1,261,046
	1908	418,400	49,428	127,831	210,814	87,201	1,102,644
	1909	482,473	38,396	107,915	227,625	97,125	1,203,528
	1910	526,605	49,971	117,831	261,232	140,611	1,428,029
	1911	611,355	63,389	151,788	323,482	202,772	1,755,583
Earthenware, cements, glass, etc.	1907	399,074	119,915	28,357	206,705	68,036	863,849
	1908	411,913	103,776	26,918	215,293	40,923	855,855
	1909	378,049	119,693	27,312	176,082	41,866	791,705
	1910	492,842	136,138	31,213	234,074	61,123	1,015,313
	1911	553,817	180,445	35,694	318,258	60,043	1,228,122
Drugs, chemicals, fertilisers	1907	838,227	16,853	181,258	202,269	146,825	1,840,933
	1908	819,949	12,034	224,398	161,594	132,406	1,916,680
	1909	735,854	9,847	173,753	168,590	132,596	1,744,023
	1910	989,349	18,767	177,839	185,794	140,957	2,186,005
	1911	896,921	8,390	238,570	212,045	152,413	2,178,600
Leather and manufactures thereof and substitutes therefor, including india-rubber (excluding boots)	1907	414,302	1,406	40,490	117,833	275,235	1,004,822
	1908	367,839	202	49,534	145,461	227,260	932,033
	1909	383,930	551	54,079	210,307	294,128	1,080,222
	1910	490,154	1,573	64,407	189,660	306,363	1,303,134
	1911	544,583	7,261	57,172	257,117	323,825	1,586,503
Total above-mentioned imports	1907	22,052,050	538,781	1,567,351	3,802,959	3,641,703	36,318,861
	1908	20,477,098	541,319	1,563,543	3,655,937	3,374,630	34,444,436
	1909	21,183,097	564,652	1,541,623	3,712,650	3,130,059	35,275,485
	1910	24,472,575	730,035	1,616,394	4,234,708	4,118,780	41,727,366
	1911	26,561,887	971,925	1,868,774	5,106,062	4,894,909	45,889,565
Total imports (less bullion and specie)	1907	26,441,942	632,486	1,742,612	4,622,933	6,763,531	49,974,833
	1908	25,042,810	636,450	1,775,389	4,482,119	6,574,380	48,608,921
	1909	25,809,347	662,132	1,784,312	4,537,112	5,934,295	50,115,521
	1910	30,048,714	853,708	1,949,735	5,214,149	7,658,878	58,682,391
	1911	32,365,588	1,141,075	2,268,692	6,363,248	9,007,065	64,997,907

NOTE.—1905 figures were last shown in No. 3, and 1906 figures in No. 5 Year Book.

* Mainly pig iron and bar and rod iron.

In the above table the totals only, of the several classes of goods mentioned, have been dealt with. On pages 635 *et seq.* will be found a more detailed analysis, showing the principal items of United Kingdom origin, in which goods favoured by preferential tariff rates are distinguished from other imports.

COMMONWEALTH PERCENTAGE ON TOTAL IMPORTS, OF IMPORTS OF PRODUCTS OR MANUFACTURES OF THE UNITED KINGDOM, BELGIUM, FRANCE, GERMANY, AND THE UNITED STATES OF AMERICA DURING THE YEARS 1907 to 1911.

Nature of Imports.	Year.	United Kingdom.	Belgium.	France.	Germany.	U.S.A.	All Countries
Foodstuffs of animal origin	1907	25.81	0.12	0.67	1.14	22.30	100
	1908	39.19	0.04	0.61	1.20	27.25	100
	1909	41.23	0.60	0.72	0.90	24.16	100
	1910	35.83	0.14	0.44	0.73	27.75	100
	1911	32.65	0.11	0.39	1.02	27.73	100
Alcoholic liquors, etc.	1907	65.21	0.20	17.43	4.62	1.67	100
	1908	63.96	0.05	17.82	4.91	1.15	100
	1909	63.92	0.11	16.71	5.36	0.87	100
	1910	63.59	0.09	17.36	5.75	1.05	100
	1911	59.25	0.02	23.09	5.88	1.18	100
Apparel (including boots), textiles, etc. ...	1907	64.44	0.90	5.79	8.75	2.89	100
	1908	63.56	0.95	5.68	9.04	2.53	100
	1909	62.53	1.05	5.81	8.80	2.41	100
	1910	62.48	1.17	4.96	8.29	2.46	100
	1911	64.25	1.31	4.83	9.02	2.89	100
Metals unmanufactured or partly manufactured, excluding gold and silver bullion ...	1907	72.66	5.10	0.19	9.96	4.08	100
	1908	68.20	6.42	0.41	13.38	6.25	100
	1909	68.68	7.56	0.25	11.94	3.15	100
	1910	63.38	9.70	0.22	15.35	3.47	100
	1911	61.10	9.89	0.17	15.15	3.86	100
Manufactures of metals ...	1907	64.27	0.64	0.28	11.25	19.21	100
	1908	64.40	1.46	0.43	11.23	19.05	100
	1909	65.43	1.38	0.46	11.48	16.71	100
	1910	62.04	1.32	0.40	11.34	20.37	100
	1911	59.87	1.98	0.41	12.14	21.32	100
Paper and stationery ...	1907	57.89	1.07	0.50	15.33	15.77	100
	1908	54.45	1.43	0.61	13.87	13.08	100
	1909	59.97	1.13	0.71	11.29	11.02	100
	1910	58.96	1.29	0.73	10.10	11.20	100
	1911	58.33	1.40	0.78	10.99	10.70	100
Jewellery, timepieces, and fancy goods ...	1907	40.97	3.82	8.68	18.98	10.42	100
	1908	37.95	4.48	11.59	19.12	7.91	100
	1909	40.09	3.19	8.97	18.92	8.07	100
	1910	36.88	3.50	8.25	18.29	9.85	100
	1911	34.83	3.90	8.64	18.44	11.55	100
Earthenware, cements, glass, etc. ...	1907	46.19	13.88	3.28	23.93	7.87	100
	1908	48.09	12.13	3.15	25.16	4.78	100
	1909	47.75	15.11	3.45	22.24	5.29	100
	1910	48.54	13.41	3.07	23.05	6.02	100
	1911	45.09	14.69	2.90	25.91	4.88	100
Drugs, chemicals, and fertilisers ...	1907	45.54	0.91	9.85	10.88	7.98	100
	1908	42.78	0.62	11.71	8.43	6.91	100
	1909	42.20	0.56	9.96	9.67	7.60	100
	1910	42.97	0.86	8.14	8.50	6.45	100
	1911	41.18	0.38	10.71	9.73	6.99	100
Leather and manufactures thereof and substitutes therefor, including india-rubber (excluding boots)	1907	41.24	0.14	4.03	11.73	27.40	100
	1908	39.47	0.02	5.31	15.61	24.39	100
	1909	35.55	0.05	5.01	19.47	27.23	100
	1910	37.61	0.12	4.94	14.55	23.51	100
	1911	34.32	0.45	3.60	16.21	20.41	100
Total above-mentioned articles ...	1907	60.72	1.48	4.32	10.47	10.03	100
	1908	59.74	1.57	4.54	10.61	9.80	100
	1909	60.05	1.60	4.37	10.52	8.87	100
	1910	58.65	1.75	3.87	10.15	9.87	100
	1911	57.88	2.12	4.07	11.13	10.67	100
Total imports...	1907	52.91	1.27	3.49	9.25	13.53	100
	1908	51.52	1.31	3.65	9.22	13.54	100
	1909	51.50	1.32	3.56	9.05	11.84	100
	1910	51.21	1.45	3.32	8.89	13.05	100
	1911	49.80	1.75	3.49	9.79	13.68	100

A comparison of the results given in the immediately preceding tables with those given on pages 625 and 626 discloses the value of the export trade of other countries which reaches the Commonwealth through the United Kingdom.

3. Significance of Increase of Trade with other Countries.—It has been suggested that the larger proportion of imports now received from foreign countries is due to the establishment and increase of direct shipping with the countries concerned, and that trade formerly received through English ports is now received direct. From the Australian records it is impossible to ascertain the value of the indirect trade with foreign countries through the United Kingdom prior to 1905. The returns of the British Board of Trade, however, shew the exports from the United Kingdom to Australia of foreign and colonial products distinct from the domestic exports, and from this source the table hereunder has been compiled.

It is proper here to mention that, taken in quinquennial periods, the values of the total exports from the United Kingdom to Australia—after making allowance for freight and charges—are in very close agreement with the corresponding import values recorded in this country.

**AVERAGE ANNUAL VALUE OF MERCHANDISE AND BULLION AND SPECIE
DESPATCHED FROM THE UNITED KINGDOM TO AUSTRALIA, 1886 to 1911.**

Years.	Merchandise.			Bullion and Specie.	Total.	Percentage Proportion of Foreign and Colonial Produce.
	United Kingdom Produce.	Foreign and Colonial Produce.				
		Re-exported.	Transhipped under Bond.			
	£	£	£	£	£	
1886-1890	19,510,884	2,344,309	874,249	90,135	22,819,577	14.16
1891-1895	15,376,625	1,756,065	556,287	402,256	18,091,233	13.07
1896-1900	18,353,571	1,919,912	445,552	117,146	20,836,181	11.42
1901-1905	18,271,705	2,226,321	750,520	79,014	21,327,560	14.01
1906-1910	23,783,823	2,990,009	1,183,812	221,956	28,179,600	14.93
1911	30,881,094	3,659,182	1,477,713	353,164	36,371,153	14.26

From the above table it will be seen that the average proportion of foreign goods despatched to Australia through the United Kingdom during 1911 is almost identical with the average of the years 1886-90, and is greater than the average of the past twenty-five years, viz., 13.52 per cent. During the quinquennium 1886-90 the average value of foreign and colonial produce despatched each year from the United Kingdom to Australia was £3,218,558, equal to 14.16 per cent. of all goods so despatched, while during the period 1906-10 the corresponding amount was £4,173,821, or 14.93 per cent. and in 1911 14.26 per cent. It is therefore apparent that the increase of direct imports from foreign countries has not been, in the aggregate, at the expense of the indirect trade via Great Britain.

4. Preferential Tariff.—The Tariff Act of 1908, at present in force, provides preferential tariff rates in favour of goods produced or manufactured in the United Kingdom. On the introduction of the preferential treatment of British goods, it was required that British material or labour should represent not less than one-fourth the value of such goods. From the 1st September, 1911, it has been required, in regard to goods only partially manufactured in the United Kingdom, that the final process or processes of manufacture shall have been performed in the United Kingdom, and that the expenditure in material of British production and/or British labour shall have been not less than one-fourth of the factory or works' cost of the goods in the finished state.

In the analyses given in this section the results shewn are those obtained by applying the tariff rates to the imports of the year, whether entered for consumption or re-exported. The re-exports are, however, relatively small.

The following table presents an analysis of the imports during 1911, distinguishing those affected—favourably or adversely—by the preferential provisions of the tariff, from those not affected:—

COMMONWEALTH IMPORTS, 1911, PREFERENTIAL AND NON-PREFERENTIAL.

Particulars.	Country of Origin.			
	United Kingdom.	British Possessions.	Foreign Countries.	Total.
Imports affected by preferential tariff	£	£	£	£
Free	6,972,586	—	—	6,972,586
Dutiable	14,145,471	268,511	11,825,659	26,239,641
Total	21,118,057	268,511	11,825,659	33,212,227
Impts. not affected by preferential tariff				
Free	7,609,261	3,952,511	8,181,275	19,743,047
Dutiable	3,638,270	2,134,792	6,269,571	12,042,633
Total	11,247,531	6,087,303	14,450,846	31,785,680
Total merchandise	32,365,588	6,355,814	26,276,505	64,997,907
Bullion and specie	370,383	1,577,431	21,767	1,969,581
Total imports	32,735,971	7,933,245	26,298,272	66,967,488

Of the total imports of merchandise (£64,997,907) £33,212,227, or 51.10 per cent., would be affected by the preferential tariff.

The imports during 1911 of United Kingdom origin, favoured by preference, amounted to £21,118,057, representing 65.24 per cent. of the total imports of merchandise from that country, against £19,049,506 (63.40 per cent.) during 1910. Under the preferential tariff these imports would be subject to duty equivalent to an average *ad valorem* rate of 12.99 per cent., as compared with an average rate of 18.06 per cent. which the same goods would be required to pay under the general tariff rates—an advantage of £1,071,185 in the amount of duty. The actual amount of rebate allowed on United Kingdom goods entered for home consumption during 1911, under the varying rates of duty, was £1,070,823.

The following tables give the comparative results of an application of the preferential tariff rates and the general tariff rates to the imports from the United Kingdom, British Possessions and foreign countries respectively:—

IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES.

FROM UNITED KINGDOM.

Particulars.	Imports.	Duty which would be payable under—			
		Preferential Tariff.		General Tariff.	
	£	£	Rate %	£	Rate %
(A) Free	6,972,586	—	—	861,329	5.18
(B) Dutiable	14,145,471	2,743,827	19.40	3,453,683	24.42
Total	21,118,057	2,743,827	12.99	3,815,012	18.06

IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES.

FROM BRITISH POSSESSIONS.

Particulars.	Imports.	Duty which would be payable under—			
		General Tariff.		Preferential Tariff.	
	£	£	Rate %	£	Rate %
Imports similar to group A above	98,902	4,695	5.00	...	...
Imports similar to group B above	174,609	52,785	30.23	42,623	24.46
Total	268,511	57,480	21.41	42,623	15.87

FROM FOREIGN COUNTRIES.

Imports similar to group A above	£ 1,935,188	£ 96,877	Rate % 5.01	£ ...	Rate % ...
" " " " B "	9,890,471	2,411,562	24.38	1,866,401	18.87
Total	11,825,659	2,508,439	21.21	1,866,401	15.78

The proportion of the imports from British Possessions adversely affected by the preference to the United Kingdom is relatively small, representing only 4.22 per cent. of the imports of merchandise from those countries. The surcharge of duty on imports from British Possessions during 1911 amounted to £14,857, as against £10,747 in 1910. The sum of £14,857 would, on the basis of the trade of 1911, represent the loss of revenue involved in an extension of the preference given to the United Kingdom to the rest of the Empire, as in the preferential scheme of New Zealand. The British Possessions chiefly affected are India, Canada, Straits Settlements, and New Zealand.

The surcharge on imports, affected by preference, from foreign countries during 1911 would amount to £642,038, as against £522,069 during 1910.

5. **Effect of Preference.**—It may again be mentioned here that the system of recording imports according to "country of origin," was introduced only from the beginning of 1905, and it is evident that in the earlier period of its operation, some goods, imported through the United Kingdom, were wrongly described as of United Kingdom origin. Particular instances in which manufactures of foreign countries have obviously been credited to the United Kingdom are alluded to later. When the question of revenue became involved, and a more exact description of the goods was insisted upon, goods which might formerly have been accepted and recorded as British would be correctly classed as foreign.

A comparison of the returns of the British Board of Trade (showing the exports of produce or manufacture of the United Kingdom to Australia) with the import returns of the Commonwealth, supports the belief that the proportion of the trade credited to the United Kingdom in this country during the years 1905 and 1906 is too high. If this supposition be correct, the apparent decline in the proportion of British goods, as compared with the years mentioned, indicated by the Commonwealth records, is somewhat misleading.

In regard to imports of United Kingdom origin, it has been shewn in previous issues that, while the results for the later years are in substantial agreement, those ascertained from the Commonwealth import returns for 1905 are 8.35 per cent. above those ascertained from the returns of the British Board of Trade.

If it be conceded that the figures of the British Board of Trade for 1905 and 1906 with 10 per cent. added are nearer the truth than the Commonwealth records for those years, and in the subsequent years the Commonwealth figures be accepted, the results would be approximately as follows:—

IMPORTS OF UNITED KINGDOM ORIGIN, 1905 to 1911.

Year.	Preferential Imports.		Non-Preferential Imports.*		Total.*	
	Value.	Per cent. on Total Pref. Imports.	Value.	Per cent. on Total Non-Pref. Imports.	Value.	Per cent. on Total Imports.
	£	%	£	%	£	%
1905†	12,220,000	63.98	6,321,000	48.18	18,541,000	57.55
1906†	14,316,000	66.80	7,774,000	50.02	22,090,000	59.74
1907	17,049,000	66.08	9,224,000	51.12	26,273,000	59.93
1908	15,896,000	65.70	9,007,000	50.70	24,903,000	59.36
1909	16,482,000	66.80	9,137,000	49.94	25,619,000	59.61
1910	19,049,000	65.88	10,821,000	48.37	29,870,000	58.23
1911	21,118,000	63.58	10,957,000	46.81	32,075,000	56.66

See note (*) to table on following page. † The figures for these years are based on export returns of the United Kingdom.

From this table it will be observed that instead of declining rapidly since 1905, as indicated by the Commonwealth records, the position of the United Kingdom has been, on the whole, well maintained up to and including the year 1910. The records for 1911, however, shew a very pronounced decline as compared with the immediately preceding years, and mark—in both the preferential and non-preferential groups—the lowest point within the period under review to which the share of the United Kingdom has yet fallen.

The effect of industrial troubles in the United Kingdom during 1911 on her relative position in the Commonwealth import trade cannot, of course, be measured, but it is more than probable that it has been material. It is also possible that the revised definition of "origin" has had the apparent effect of reducing the value of United Kingdom goods and correspondingly increasing those of other countries.

The following comparative tables shew the proportion of imports—preferential and non-preferential, respectively—recorded in the Commonwealth as of United Kingdom origin during the years 1905-1911:—

PREFERENTIAL IMPORTS, 1905 to 1911.

Year.	Country of Origin.							
	United Kingdom.		British Possessions.		Foreign Countries.		Total.	
	£	%	£	%	£	%	£	%
1905*	13,268,596	69.56	151,463	0.78	5,656,611	29.66	19,076,670	100
1906*	14,643,287	68.58	165,699	0.78	6,545,603	30.64	21,354,589	100
1907	17,049,196	66.08	210,545	0.82	8,539,885	33.10	25,799,626	100
1908	15,896,721	65.70	162,097	0.67	8,136,004	33.63	24,193,822	100
1909	16,482,032	66.80	319,900	1.29	7,875,932	31.91	24,677,764	100
1910	19,049,506	65.88	211,687	0.73	9,655,762	33.39	28,916,955	100
1911	21,118,057	63.58	266,511	0.81	11,825,559	35.61	33,212,227	100

* See modified figures in the preceding table.

From the percentages shewn in the immediately preceding table it would appear that the United Kingdom's proportion of this trade has materially declined since 1905, but, as

already mentioned, the accuracy of the figures for that year is open to doubt. It will be more satisfactory, therefore, to confine attention to years subsequent to 1906. From the above table it will be seen that, in regard to that portion of the trade which has been affected by the preferential tariff, there has been, on the whole, no decided change in the relative proportions supplied by the United Kingdom until the year 1911, when a very decided decline is apparent, the percentage proportion falling from 65.88 per cent. in 1910 to 63.58 per cent. in 1911, the imports from foreign countries within this division having increased by £2,169,897, or 22.47 per cent., while those from the United Kingdom increased by £2,068,551, representing only 10.86 per cent. It would therefore appear that over 50 per cent. of the increased trade in this division was supplied by foreign countries. During the four years since 1907 the imports from foreign countries have increased at an average annual rate of 8.48 per cent., and those from the United Kingdom by 5.56 per cent.

COMMONWEALTH NON-PREFERENTIAL IMPORTS*, 1905 to 1911.

Year.	Country of Origin.							
	United Kingdom.		British Possessions.		Foreign Countries.		Total.	
	£	%	£	%	£	%	£	%
1905†	6,843,465	51.98	1,621,168	12.31	4,701,383	35.71	13,166,016	100
1906†	7,952,039	50.81	2,017,296	12.89	5,680,078	36.30	15,649,413	100
1907	9,223,549	51.12	2,277,889	12.64	6,543,733	36.24	18,045,171	100
1908	9,006,821	50.70	2,299,775	12.95	6,456,040	36.35	17,762,636	100
1909	9,137,146	49.94	2,500,859	13.66	6,659,899	36.40	18,297,704	100
1910	10,820,679	48.37	3,526,523	15.76	8,025,977	35.87	22,373,179	100
1911	10,956,913	46.81	2,808,406	12.00	9,639,534	41.19	23,404,853	100

* In order to obtain a more satisfactory comparison only goods of a character similar to those affected by preferential rates have been included in this table. Articles such as fruits, grain, cocoa beans, raw coffee, tea, sugar, unmanufactured tobacco, hides, fibres, kerosene, timber, etc., which are not produced in the United Kingdom, have been excluded. The proportion of these goods recorded as of United Kingdom origin during 1911 was only 3.47 per cent.

† See modified figures in the first table on the preceding page.

In regard to the non-preferential imports, the proportion supplied by the United Kingdom has fallen from 51.12 per cent. in 1907 to 46.81 per cent. in 1911. The proportion supplied by foreign countries declined slightly from 36.24 per cent. in 1907 to 35.87 per cent. in 1910, but made a most pronounced advance in 1911 to 41.19 per cent.

In the review of the trade of 1910 (Year Book No. 5, page 640) it was shown that the decline in the relative position of the United Kingdom as compared with 1907 was due to increased imports from British possessions, largely composed of bags and sacks from India, imported to meet the requirements of the bountiful harvests, and of coal, also from India, imported in consequence of the miners' strike in New South Wales. In 1911, however, the imports of non-preferential goods from British Possessions fell even below their normal proportion, and, thus, by the reduced imports of bags and sacks the relative position of the United Kingdom in the non-preferential division of the apparel and textile group has been fully restored, though a further marked decline is evident in regard to the total of the non-preferential imports. In this non-preferential division of the trade the imports from the United Kingdom during 1911 increased, as compared with 1910, by only £136,234, or 1.26 per cent., while those from foreign countries increased by £1,613,557, or 20.10 per cent. It will be observed from the foregoing table that the increase of imports from foreign countries exceeded that for the whole of the group. If, however, the imports of bags and sacks and of coal—which have been shown to be a disturbing element—be eliminated from the figures for both years it will be found that of a total increase, during 1911 over 1910, of £1,808,130, foreign countries supplied £1,654,143, or 91.48 per cent. It might be mentioned that the relative position of the United Kingdom has been adversely affected by the abnormally small imports of ships, of which she has

usually supplied about 90 per cent. The value of ships imported into the Commonwealth during 1911 was less than 50 per cent. of that of any of the four preceding years, and of this reduced aggregate the United Kingdom supplied 71 per cent. only. If the value of ships be also eliminated, it will be found that foreign countries still had as much as 72 per cent. of the increased trade. Compared with 1907 the average annual rates of increase are respectively:—United Kingdom 4.40 per cent., and foreign countries 10.17 per cent.

The principal classes of imports affected by preference are "apparel, textiles and manufactured fibres," and "manufactures of metals, including machinery." Together these two classes represented 67 per cent. of all imports affected by the preferential tariff during 1911, the former class representing 43 per cent. and the latter 24 per cent. The following analysis gives the particulars of the imports of these groups, as recorded, for the past seven years:—

COMMONWEALTH IMPORTS OF APPAREL, TEXTILES, AND MANUFACTURED FIBRES,

1905 to 1911.

PREFERENTIAL.

Year.	Country of Origin.							
	United Kingdom.		British Possessions.		Foreign Countries.		Total.	
	£	%	£	%	£	%	£	%
1905*...	7,586,841*	76.98*	42,442	0.42	2,228,104	22.60	9,857,387	100
1906*...	8,240,338*	75.92*	59,402	0.55	2,554,765	23.53	10,854,505	100
1907...	8,725,908	70.20	68,764	0.54	3,637,169	29.26	12,431,841	100
1908...	7,716,800	68.35	54,667	0.48	3,519,641	31.17	11,291,108	100
1909...	8,038,772	69.26	58,599	0.50	3,509,876	30.24	11,607,247	100
1910...	9,511,026	70.31	55,662	0.41	3,960,627	29.28	13,527,315	100
1911...	10,022,798	70.06	68,030	0.48	4,214,179	29.46	14,305,007	100

NON-PREFERENTIAL.

1905*...	903,653*	42.28*	971,931	45.47	261,815	12.25	2,137,399	100
1906*...	1,045,608*	39.72*	1,251,056	47.53	335,389	12.75	2,632,053	100
1907...	1,153,686	39.66	1,327,829	45.64	427,325	14.70	2,908,820	100
1908...	1,074,671	42.08	1,168,473	45.76	310,435	12.16	2,553,579	100
1909...	1,193,196	37.77	1,380,056	43.70	585,239	18.53	3,158,491	100
1910...	1,335,342	35.42	1,798,895	45.29	727,053	18.59	3,911,290	100
1911...	1,440,129	40.73	1,330,974	37.65	764,366	21.62	3,535,469	100

* The amount credited to the United Kingdom in these years is considered to be in excess of the truth.

The above table, referring to preferential imports, shews very little variation in the distribution of the textile trade as between the United Kingdom and foreign countries since 1906, and the same stability is maintained throughout the several lines shewn in the following detailed table. The sudden decline in the United Kingdom's share of the preferential group from 75.92 per cent. in 1906 to 70.20 per cent. in 1907, accompanied by a decline of only 0.06 per cent. during the same period in the non-preferential group, suggests, however, that the differentiation in the rates of duty instantly caused a greater accuracy in the statement of origin of goods in the preferential group, whereas in the non-preferential group, where loss of revenue was not involved, the element of misdescription was more gradually eliminated, and, consequently, that the decline in the latter is more apparent than real. This appears to be amply supported by the item "Minor Articles for Apparel," on which no duty is payable, for while the total imports under this heading have increased from £211,324 in 1905 to £412,064 in 1911 (95 per cent.), and the imports recorded as shipped from the United Kingdom have increased from £178,657 to £326,526 (83 per cent.), the amount recorded as of United Kingdom origin has only increased from £162,767 to £178,218 (9 per cent.); or, in other words, of the total imports of this item recorded as shipped from the United Kingdom in 1905, 91 per cent. was recorded

as of United Kingdom origin; in 1906, 89 per cent.; in 1907, 79 per cent.; in 1908, 70 per cent.; in 1909, 58 per cent.; and in 1910 and 1911, only 54 per cent. The proper assumption is that in the earlier years the United Kingdom was credited with goods which she did not manufacture, rather than that she has, in so short a time, lost so largely to her rivals.

The detailed tables which are appended shew the relative proportions of the various classes of textile goods supplied by the United Kingdom. In regard to those textile goods affected by preference the figures shew that since 1907 (the first year with which satisfactory comparisons can be made), the share of the United Kingdom has been substantially maintained in nearly all the lines enumerated below, the aggregate result being that in the year 1911 she supplied 70.06 per cent. as against 70.20 per cent. in 1907.

The value and proportion of the more important items, included in the above groups of apparel and textiles, recorded as of United Kingdom manufacture, are given below:—

**COMMONWEALTH IMPORTS OF PREFERENTIAL ITEMS OF APPAREL AND TEXTILES
RECORDED AS OF UNITED KINGDOM ORIGIN, 1907 to 1911.**

Items.	1907.		1908.		1909.		1910.		1911.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
Apparel—	£	%	£	%	£	%	£	%	£	%
Boots and shoes ...	195,426	66.28	174,153	64.87	187,690	68.22	238,597	67.23	264,713	71.17
Gloves ...	48,168	17.07	38,320	15.00	49,148	16.75	31,659	10.78	29,133	8.31
Hats, caps, & bonnets	280,853	63.87	208,143	70.36	176,998	66.36	209,443	67.31	222,486	67.34
Socks and stockings of wool, &c. ...	348,307	97.23	*402,040	80.35	367,669	95.73	412,359	95.47	440,318	95.35
Trimmings & Ornaments ...	86,317	25.73	54,860	26.69	49,130	31.30	46,547	25.85	53,762	11.58
Other apparel	1,040,855	67.28	905,922	68.26	906,615	66.90	1,044,336	66.08	1,158,403	64.21
Textiles, etc. — Piece goods — Cotton and linen, n.e.l. ...	3,266,665	89.90	2,946,313	89.71	3,208,581	88.71	3,936,739	88.36	3,919,465	86.62
Woollen or containing wool ...	1,849,153	80.62	1,580,004	78.74	1,595,809	81.18	1,815,245	84.57	1,960,760	85.68
Silk or containing silk (not containing wool) ...	106,008	11.73	63,676	7.61	89,534	10.31	115,003	12.19	142,257	13.81
Velvets, velveteens, plushes, ribbons, lace, etc. ...	235,214	27.67	233,384	23.92	278,786	25.48	274,450	22.52	300,520	134.69
Flannelettes ...	228,240	81.85	193,142	79.63	127,466	81.40	138,098	82.50	136,564	84.48
Other textiles & manufactured fibres ...	1,060,702	85.23	916,843	83.98	1,001,346	85.35	1,248,550	86.38	1,414,417	85.95
Total apparel & textiles	8,725,908	70.20	7,716,800	68.35	8,038,772	69.26	9,511,026	70.31	10,022,798	70.06

* Includes cotton socks which were subject to preferential rates to the 29th April only. No separate record was made of the imports of cotton socks during 1908.

† In this year some ribbons, galloons, etc., previously included with Velvets, etc., have been transferred to Trimmings and Ornaments.

The items "gloves," "trimmings and ornaments," and "silk and velvet piece goods," appear to furnish further definite instances of misdescription in the earlier years under review.* These goods are largely gathered from other parts of the world into the United Kingdom, whence they are shipped to Australia. The records for 1909 shew that, of the total imports into the Commonwealth of these four items taken conjointly, only 19.34 per cent. was of United Kingdom origin, while as much as 83.63 per cent. was shipped from that country. In 1911 the corresponding proportions were 18.53 per cent. and 79.41

* For 1906 figures see previous issue.

per cent. respectively. Under these circumstances it appears probable that, until the question of revenue arose (viz., in August, 1907), some portion of these goods, merely packed in the United Kingdom, was recorded as of British manufacture. This suggestion is again supported by the British trade returns, for although the items presented therein are not identical with the items in the Commonwealth returns, it can be shewn that the exports from the United Kingdom to Australia of British silk manufactures bear to the imports into the Commonwealth of silk, etc., piece goods the same ratio in 1908 as in 1905, viz., 10.88 per cent., instead of declining, as shewn by the Commonwealth records, from 24.97 per cent. to 7.61 per cent., while in subsequent years the two records are consistent.

**COMMONWEALTH IMPORTS OF NON-PREFERENTIAL ITEMS OF APPAREL AND
TEXTILES RECORDED AS OF UNITED KINGDOM ORIGIN, 1907 to 1911.**

Items.	1907.		1908.		1909.		1910.		1911.	
	Amount.	Per cent.	Amount.	Per cent.	Amount	Per cent.	Amount.	Per cent.	Amount.	Per cent.
	£	%	£	%	£	%	£	%	£	%
Apparel—Socks & stockings of cotton ...	48,207	29.66	*	...	40,639	25.06	48,697	27.37	45,576	23.51
Other ...	97,228	76.00	67,067	72.94	56,474	48.50	57,612	47.71	76,671	48.27
Minor Articles for—										
Boots and shoes ...	33,340	56.73	31,885	57.07	31,735	60.87	35,044	51.80	34,875	53.82
Hats and caps ...	42,937	29.78	39,279	31.81	58,236	30.70	59,695	25.54	58,317	31.15
Umbrellas ...	20,902	96.26	33,387	97.86	32,456	96.24	40,211	93.87	32,969	91.97
Other apparel ...	153,600	65.83	129,852	57.15	156,040	48.38	171,461	44.55	178,218	43.25
Piece goods—Canvas & duck ...	107,792	89.05	142,855	92.26	164,095	90.97	212,779	89.62	237,353	89.42
Hessians ...	47,840	19.14	27,304	14.63	51,593	24.65	50,268	21.44	28,185	13.73
Other ...	69,551	79.28	80,134	83.69	84,222	74.92	114,352	69.18	115,434	68.04
Sewing silks, threads, etc.	317,519	87.76	315,109	89.50	312,217	89.88	360,900	91.90	402,051	91.86
Tents and flags ...	4,147	91.49	5,159	85.64	3,816	96.58	12,734	98.30	10,608	95.28
Cordage and twine ...	200,040	90.03	200,449	88.09	196,241	84.43	215,371	90.81	208,690	85.37
Bags and sacks ...	10,573	0.95	2,191	0.22	5,432	0.45	6,218	0.39	11,182	0.97
Total ...	1,153,666	39.66	1,074,671	42.08	1,193,196	37.77	1,385,342	35.42	1,440,129	40.73

* Not recorded apart from woollen socks and stockings in this year.

**COMMONWEALTH IMPORTS OF METALS AND MANUFACTURES OF METALS
(INCLUDING MACHINERY), 1905 to 1911.
PREFERENTIAL.**

Year.	Country of Origin.							
	United Kingdom.		British Possessions.		Foreign Countries.		Total.	
	£	%	£	%	£	%	£	%
1905 ...	2,690,043	72.77	13,597	0.37	993,252	26.86	3,696,892	100
1906 ...	3,132,437	73.35	17,492	0.41	1,121,241	26.24	4,271,170	100
1907 ...	4,401,531	75.73	25,926	0.45	1,384,530	23.82	5,811,987	100
1908 ...	4,271,659	75.53	9,765	0.17	1,374,303	24.30	5,655,727	100
1909 ...	4,517,994	76.95	144,933	2.47	1,208,538	20.58	5,871,465	100
1910 ...	4,834,293	73.13	17,384	0.26	1,759,351	26.61	6,611,028	100
1911 ...	5,675,023	70.72	17,360	0.22	2,332,527	29.06	8,024,910	100

NON-PREFERENTIAL.

	£	%	£	%	£	%	£	%
1905 ...	1,793,631	51.40	129,747	3.72	1,566,421	44.88	3,489,799	100
1906 ...	2,416,705	53.22	92,978	2.05	2,030,556	44.73	4,540,239	100
1907 ...	3,180,805	54.90	209,725	3.62	2,403,455	41.48	5,793,985	100
1908 ...	2,942,084	53.85	189,632	3.47	2,332,059	42.68	5,463,775	100
1909 ...	2,934,101	53.91	201,511	3.70	2,307,684	42.39	5,443,296	100
1910 ...	3,478,432	51.90	325,299	4.85	2,898,362	43.25	6,702,093	100
1911 ...	3,756,393	49.27	368,234	4.83	3,500,862	45.90	7,625,489	100

**COMMONWEALTH IMPORTS OF PRINCIPAL ITEMS OF METALS, Etc., INCLUDING
MACHINERY, RECORDED AS OF UNITED KINGDOM ORIGIN, 1907 to 1911.**

PREFERENTIAL.

Items.	1907.		1908.		1909.		1910.		1911.	
	Amount.	%	Amount.	%	Amount.	%	Amount.	%	Amount.	%
	£		£		£		£		£	
Iron & steel girders, beams, etc. ...	64,366	68.88	72,990	65.23	77,648	82.61	138,588	82.92	182,685	72.18
Plate & sheet (corrugated or galvd.)	1,279,440	94.36	1,098,985	97.42	1,375,433	95.36	1,590,746	92.37	1,677,259	94.18
Rails, fishplts., etc.	562,610	89.46	530,678	66.93	436,872	54.40	399,547	48.69	499,629	46.27
Tinned plates ...	247,650	99.55	284,564	99.97	284,446	99.91	355,395	99.99	486,311	100.00
	2,154,066	92.57	1,987,217	85.75	2,174,399	82.86	2,484,276	81.04	2,845,884	79.04
Machinery	775,673	62.15	922,615	72.64	1,015,163	77.06	691,224	63.46	946,182	64.42
Cutlery and plated-ware ...	318,324	83.63	284,732	83.00	320,067	84.65	394,239	85.17	426,685	84.32
Other manufactures of metals ...	1,153,468	62.15	1,077,095	62.44	1,008,365	65.20	1,264,554	63.43	1,456,272	59.45
	2,247,465	64.50	2,284,442	68.44	2,343,595	72.18	2,350,017	66.28	2,829,139	63.94
Total ...	4,401,531	75.73	4,271,659	75.53	4,517,994	76.95	4,834,293	73.12	5,675,023	70.72

NON-PREFERENTIAL.

Iron and steel—										
Pig ...	162,815	90.16	89,341	87.51	129,212	92.68	105,596	77.10	132,857	66.24
Bar, rod, angle, and tee ...	475,748	79.31	425,900	74.20	393,939	70.88	552,788	70.37	572,569	68.50
Hoop ...	42,513	62.40	29,800	51.28	25,248	41.35	27,604	41.63	33,036	40.14
Ingots, blooms & slabs ...	10,470	26.23	3,107	10.36	7,556	23.69	9,910	19.30	18,220	26.69
Plate and sheet—plain ...	179,928	62.98	131,379	60.84	148,537	59.46	201,788	61.03	217,401	55.63
Scrap ...	44,989	88.64	45,194	94.59	37,125	93.17	48,118	98.91	68,816	97.26
	916,463	74.83	724,721	70.50	741,617	68.80	945,804	66.63	1,042,899	63.26
Machinery—										
Agricultural dairy-ing, etc. ...	53,491	10.32	61,964	14.21	81,458	17.10	96,029	13.63	74,601	10.52
Engines—										
Gas and oil ...	113,035	73.70	79,553	70.03	103,554	74.66	124,732	73.59	114,224	67.71
Sewing machines	12,789	6.76	64,249	35.85	86,038	45.70	106,849	42.17	91,328	32.00
Other machinery and mach. tools	324,889	50.55	542,484	54.16	472,127	52.61	620,046	53.55	656,451	48.58
Tools of trade ...	219,907	45.98	233,980	43.51	216,568	52.42	287,341	52.48	319,902	43.88
Wire—Iron & steel	52,365	9.67	71,282	12.66	75,435	13.64	115,555	16.51	111,267	14.92
Other	96,335	72.82	73,112	59.93	49,348	48.86	104,039	65.82	107,677	62.13
Wire netting	400,708	68.90	309,853	67.56	216,186	58.85	159,291	55.42	179,649	54.30
Other metals and man'fact. thereof	990,823	74.44	780,886	73.68	891,770	72.21	918,746	70.42	1,058,395	67.95
	2,264,342	49.55	2,217,363	49.98	2,192,484	50.22	2,532,628	47.94	2,713,494	45.40
Total ...	3,180,805	54.90	2,942,084	53.85	2,934,101	53.91	3,478,432	51.90	3,756,393	49.27

The foregoing tables shew, in regard to metals and manufactures thereof, that, in the preferential division, the relative position of the United Kingdom improved somewhat during the years 1907-9, but has since fallen to the lowest point yet registered. In this division the imports from the United Kingdom shew an average annual increase of 13.25 per cent. since 1905, and those from foreign countries an increase of 19.80 per cent. per annum, with the result that the proportion supplied by the United Kingdom has declined from 72.77 per cent. of the whole to 70.72 per cent., while that received from foreign countries has increased from 26.86 per cent. to 29.06 per cent. Comparing 1911 with 1910, the imports of United Kingdom origin increased by £840,730, or 17.40 per cent., and those of foreign manufacture by £573,176, or 32.61 per cent.; or, differently stated, of the increased trade (£1,413,882) the United Kingdom supplied 59.46 per cent. and foreign countries 40.54 per cent. In 1910 foreign countries supplied 74.47 per cent. of the increase.

In the non-preferential division the imports from the United Kingdom have increased since 1905 at an average annual rate of 13.11 per cent., and from foreign countries at a rate of 13.90 per cent. per annum. In 1911 the trade of the United Kingdom shews an increase of £277,961, or 8.00 per cent., and the trade of foreign countries an increase of £602,500, or 20.80 per cent., over that of 1910. Of the total increase for the year (£923,396) the United Kingdom supplied only 30.12 per cent. and foreign countries 65.25 per cent. In 1910 foreign countries supplied only 46.91 per cent. of the year's increase.

If the trade of 1911 be compared with that of 1907, when the preferential tariff was introduced, it will be seen that of the increased trade in the preferential division (£2,212,923) the United Kingdom supplied £1,273,492, or 57.54* per cent., representing an increase of 28.95 per cent. on her sales, and foreign countries £947,997, or 42.84* per cent.—equal to an increase of 68.48 per cent. on sales. To maintain the relative positions as in 1907 required that the United Kingdom should have supplied 75.73 per cent. of the increase, which would mean that, instead of her sales in this group during 1911 being £5,675,023, they should have been £6,077,000.

During the same period the imports in the non-preferential division increased by £1,831,504, of which the United Kingdom supplied £575,588, or 31.43 per cent., representing an increase of 18.09 per cent. on her sales, and foreign countries supplied £1,097,407, or 59.92 per cent., representing an increase of 45.64 per cent. on sales. The remaining 8.65 per cent. of the increase was, of course, supplied by British possessions, and was chiefly composed of agricultural implements from Canada.

Observation of the fact that the United Kingdom has furnished 57.54 per cent. of the new trade in the preferential division and only 31.43 per cent. in the non-preferential division might suggest the degree of effect of the preference. It must, however, be borne in mind that in the former case the United Kingdom had, at the beginning of the period, 75.73 per cent. of the trade and in the latter only 54.90. Moreover, such complete reversions as are shewn in the proportions secured of the increased trade of 1910 over 1909, and of 1911 over 1910,—referred to in the concluding sentences of the first two paragraphs above—point to influences which, at least at times, outweigh the advantages of the tariff. As suggested in the last issue of the Year Book, until it is shewn that those influences—whatever their character—which have enabled the British manufacturer to improve his position in certain lines without the aid of preference, have not been operative in regard to items in the preferential division, or at least until there is a

more marked divergence between the movements of the relative positions in the two groups, no indubitable pronouncement in regard to the efficiency of the preferential tariff can be made.

The records of the imports of metals and metal manufactures may be accepted as free from the defects previously alluded to in regard to apparel and textiles. The proportion of metal goods of foreign origin received via the United Kingdom is relatively small.

This group also affords a more satisfactory basis of comparison on which to measure the effects of preference than does the textile group, for the reason that the value of the trade is more even between the two divisions (preferential and non-preferential), and further, the character of the goods in one division does not differ from that in the other, whereas, in the textile groups, the goods embraced in the preferential division represented, in 1911, 81.3 per cent. of the total of the group and differ somewhat in character from those in the non-preferential division.

It is of interest to note that, while in the supply of the less complex forms of metal manufacture in both the preferential and non-preferential divisions the British manufacturers have failed to hold their position as in 1905,* in the supply of machinery and the higher forms of manufacture they still shew some slight improvement as compared with 1905, notwithstanding the decline as compared with later years. It should also be remarked that the general tendency of the movement of the relative position of the United Kingdom was in evidence before the introduction of preference, both in the downward movement of the simpler manufactures and in the upward movement of the more complex.

It might also be suggested that the failure of the United Kingdom to maintain for an indefinite period, without extreme protective measures in its favour, the same relatively high position (in an increasing volume of trade and in opposition to the highly organised competition of other nations of more recent industrial development) formerly held by it, should not, *per se*, be taken as evidence of waning industrial or commercial virility.

Taking together the two groups of the simpler forms of iron and steel manufactures, enumerated in the above tables, it appears that in 1905*, of a total trade of £2,051,077, the United Kingdom supplied £1,758,638, or 85.74 per cent., while in 1911, when the total value of the same trade had increased to £5,248,979, she supplied £3,888,783, representing, however, only 74.09 per cent. Thus, though the United Kingdom increased her sales to the Commonwealth by £2,130,145, while similar sales by all other countries increased only by £1,067,755, the relative proportion of the trade supplied by the United Kingdom fell from 85.74 per cent. in 1905 to 74.09 in 1911. Moreover, in the important item of iron plate and sheet, corrugated and galvanised, the United Kingdom had still as much as 94.18 per cent. of the trade, and in tinned plates she had a complete monopoly. That such a monopoly should be maintained by her, in the face of the circumstances referred to above and in view of the rapidly increasing volume of the world's trade, is scarcely to be expected.

The decline in 1910 in the United Kingdom's share of the trade in corrugated or galvanised iron (sheet and plate) was due to increased sales by the United States, which in 1910 were nearly double those of 1909, the amounts being—1909, £64,805, 1910,

* For 1905 figures, see Year Book No. 4.

£128,010, and 1911, £100,973. The proportions of rails and fishplates, etc., supplied by the United Kingdom shew remarkable fluctuations.

The countries from which the principal supplies of rails, fishplates, etc., were drawn, and the percentage proportion supplied by each, are shewn in the following table:—

IMPORTS INTO THE COMMONWEALTH OF IRON AND STEEL RAILS, Etc.,
1907 TO 1911.

Country of Origin.	1907.		1908.		1909.		1910.		1911.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
	£	%	£	%	£	%	£	%	£	%
United Kingdom ...	562,610	89.46	530,678	66.92	436,872	54.39	399,547	48.69	499,629	46.27
Canada ...	—	—	—	—	132,963	16.55	8	—	—	—
Belgium ...	19,599	3.12	9,852	1.24	21,633	2.70	14,806	1.80	43,014	3.98
Germany ...	37,969	6.04	44,057	5.56	70,201	8.74	33,864	4.13	210,757	19.51
Russia... ..	—	—	36,300	4.58	—	—	—	—	—	—
Utd. States of America	7,705	1.22	171,996	21.69	140,300	17.47	371,561	45.27	309,578	28.67
Other Countries ...	1,048	0.16	45	0.01	1,131	0.15	891	0.11	16,950	1.57
Total ...	628,931	100.00	792,928	100.00	803,160	100.00	820,677	100.00	1,079,928	100.00

The very marked decline in 1910 in the United Kingdom's position in the supply of machinery, affected by preference, was due to the completion of large orders for locomotive engines for the New South Wales Government. The position of the United Kingdom in regard to the supply of pig-iron has been affected by the increased imports from India and China. The imports of pig-iron from India were in 1909 valued at £7644, in 1910 at £17,137, and in 1911 at £38,837, while those from China increased from £160 in 1909 to £11,401 in 1910, and to £21,476 in 1911. The imports of British bar, rod, angle and tee-iron which have rapidly diminished, absolutely as well as relatively, during the years 1908-1909, shew a substantial increase in value in 1910, but notwithstanding an increase in actual sales the relative proportion has again fallen in 1911. Germany, Belgium, and the United States have been the principal competitors in this trade, a steadily increasing share of the trade having fallen to the first named.

The position is very similar in regard to iron hoop. In the supply of ingots, blooms, and slabs, the United Kingdom has quite recovered her position by almost doubling the sales of 1910; Belgium at the same time increased her sales from £15,208 in 1910 to £22,889, while those of Germany were almost identical in the two years. In plain sheet and plate the United States share increased largely while that of the United Kingdom declined.

The United States supplied the whole of the increased trade in wire and also captured trade from Germany, the sales of the United Kingdom remaining practically the same as in 1910, though lower in relation to the total imports. In regard to wire netting the increased trade was almost evenly divided between the United Kingdom and Germany.

The large increase in the United Kingdom's share of the imports of sewing machines requires special explanation. In the tariff as introduced on the 8th August, 1907, it was provided that sewing machines manufactured in the United Kingdom should be free,

while those from other countries should pay 10 per cent. *ad valorem*. On the 16th November, 1907, the preferential provisions were deleted and all sewing machines became free. In the meantime, in order to procure the advantage of the tariff, the largest firm manufacturing these machines and operating both in the United States and in the United Kingdom, transferred its Australian business from its American to its British branch. Notwithstanding the cessation of preference, and in the face of higher freight charges from Liverpool direct than from New York via Liverpool, this firm, rather than again disturb its business arrangements, continued to supply the Australian trade, in certain classes of machines, from its British branch. This transfer, however, did not carry a corresponding amount of employment to the British operatives, for the reason that, while the Australian business was transferred to the United Kingdom, a corresponding amount of trade—unaffected by any preferential tariffs—formerly supplied by the British branch, was transferred to America. In 1911 the imports of sewing machines of United Kingdom origin as compared with 1910, declined by £15,521 to £91,328, while those of United States manufacture increased by £40,956 to £139,020, and from Germany by £6128 to £53,529.

A further list of items, preferential and non-preferential, recorded as of United Kingdom origin is appended:—

PRINCIPAL OTHER PREFERENTIAL IMPORTS, 1907 to 1911.

Article.	1907.		1908.		1909.		1910.		1911.	
	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.
	£		£		£		£		£	
Milk—Preserved, concentrated, etc. ...	13,727	8.05	149,673	83.02	135,240	92.64	124,116	91.72	63,162	84.93
Confectionery, cocoa, chocolate, etc. ...	270,311	67.59	256,989	69.87	295,721	70.24	345,733	70.40	417,887	62.85
Gelatine, glue, cements	19,115	33.14	19,475	45.81	21,367	47.72	25,576	44.92	27,186	45.69
Yarns ...	128,166	78.42	122,985	52.88	112,409	80.34	142,014	84.38	249,543	90.06
Oils ...	25,226	11.69	23,526	9.73	24,928	9.39	33,976	9.29	32,633	6.48
Paints ...	65,278	68.22	70,787	69.67	71,413	73.02	88,246	71.84	107,660	68.06
Varnishes ...	66,387	83.83	60,076	83.10	63,487	84.83	81,357	83.58	69,410	77.14
Slates—roofing ...	26,615	62.65	21,920	59.25	20,444	73.26	28,515	71.59	24,834	54.66
Leather ...	60,550	83.02	50,981	84.96	51,889	84.62	69,259	84.32	77,386	85.59
Rubber, m'factures of	136,463	58.82	138,310	51.55	130,118	38.94	182,157	46.34	199,231	37.94
Furniture, etc. ...	69,900	27.09	43,463	25.13	63,786	37.10	63,093	31.98	80,252	30.47
Wood manufactures ...	40,229	26.97	34,036	22.94	35,601	31.95	37,761	29.60	40,219	26.28
China & earthenware	216,869	64.38	198,738	63.46	172,382	66.28	217,193	65.50	269,360	63.20
Glass and glassware ...	90,609	27.02	78,359	27.58	68,925	25.28	84,006	26.46	95,931	25.73
Cement (Portland) ...	23,638	46.33	48,517	53.74	45,153	58.14	79,032	56.96	62,708	41.44
Tiles—roofing ...	17,766	46.22	18,671	53.51	20,851	57.63	33,498	50.99	25,503	55.24
Paper ...	280,836	52.33	270,159	51.01	281,975	57.46	333,067	56.92	361,394	53.42
Stationery ...	194,555	64.70	180,664	62.42	163,980	63.85	186,897	64.54	205,216	61.54
Timepieces, jewellery, and fancy goods	483,120	46.58	383,826	43.15	427,331	6.97	473,518	46.00	535,884	43.85
Arms ...	28,392	35.34	51,718	60.07	39,356	6.01	39,599	45.05	45,667	41.28
Percussion caps, cartridges, etc. ...	82,999	54.72	76,846	63.67	74,823	54.33	69,439	53.32	84,544	57.33
Detonators and fuse ...	42,984	98.06	36,797	96.28	45,950	97.94	40,087	97.12	43,359	96.55
Dynamite, gunpowder	277,394	82.39	293,002	77.98	324,699	76.02	307,130	70.86	299,351	71.99
Bags, baskets, etc. ...	42,038	33.59	44,000	33.55	47,026	31.42	54,706	29.79	74,361	27.78
Brushware ...	89,025	53.58	57,255	54.16	56,981	56.23	73,194	55.41	80,859	51.51
Blackings, etc. ...	55,502	66.39	38,961	72.24	23,359	68.17	12,444	48.01	10,262	39.21
Electrical articles and materials ...	233,439	68.72	271,453	73.68	164,446	74.16	277,105	77.49	430,016	75.10
Matches ...	44,848	28.74	59,264	32.68	57,716	37.03	59,043	39.89	107,305	57.04
Pianos and parts ...	43,663	13.94	24,886	10.11	34,549	13.16	46,067	13.58	73,374	15.50
Oilmen's stores	57,124	63.63	55,777	71.21	63,427	68.22	78,803	71.04	82,631	71.19
Vehicles, bicycles, tricycles, etc. ...	418,019	65.32	416,637	61.14	490,957	61.56	669,993	56.30	775,699	48.05

PRINCIPAL NON-PREFERENTIAL IMPORTS, 1907 to 1911.

Article.	1907.		1908.		1909.		1910.		1911.	
	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.
	£		£		£		£		£	
Fish	135,420	35.13	146,616	29.05	143,694	31.13	147,793	26.50	158,201	27.95
Meats	23,271	49.65	26,366	48.05	24,901	46.85	34,280	51.44	34,508	52.75
Grain, prepared (malt, oatmeal, etc.)	61,412	76.81	69,558	76.83	37,867	68.84	36,825	67.94	34,360	65.18
Hops	7,604	15.30	7,934	19.24	6,430	16.95	9,097	15.12	9,516	19.37
Oilmen's stores (free)	48,694	82.27	55,075	77.48	72,125	80.88	88,500	82.73	89,911	80.47
Mustard	45,956	98.07	39,979	99.25	46,074	99.18	48,625	98.80	47,532	97.97
Tobacco, mfd. (cigars, cigarettes, etc.)	35,238	10.76	31,941	10.24	37,850	13.12	44,122	13.63	57,366	14.69
Oils and greases	138,834	29.17	178,008	38.33	177,523	40.20	231,648	37.89	315,347	39.37
Paints and colours	232,623	85.88	213,272	86.72	207,909	85.27	223,395	85.52	205,309	86.60
Marble and stone	14,071	26.91	13,595	29.49	16,222	29.86	13,445	25.04	18,383	27.41
India-rubber manufs.	41,132	22.10	38,607	23.01	44,726	26.21	50,642	17.50	49,362	12.20
Leather, manufs. of	114,009	25.44	88,347	23.10	88,635	19.99	95,494	21.58	107,325	23.84
Harness—minor articles for ...	62,148	94.73	61,594	96.46	68,542	97.12	92,602	96.39	111,279	95.86
Furniture—minor articles for ...	34,801	74.10	36,242	70.80	50,931	76.10	52,033	77.52	60,763	78.63
Earth ware, Bricks, etc.	19,321	82.02	25,767	69.01	30,564	69.26	37,289	66.19	51,235	61.01
Glass and Glassware...	28,247	48.15	41,189	49.63	39,039	44.04	50,439	50.30	47,739	38.31
Paper...	255,238	36.63	280,859	32.99	305,451	39.86	385,543	41.08	417,018	40.86
Books, printed	424,045	92.02	421,458	89.13	465,719	90.34	501,495	88.83	616,657	89.24
Stationery	44,449	62.48	63,868	69.67	33,041	47.64	41,936	52.91	51,430	46.42
Instruments, scientific do., surgical & dental	13,903	66.35	21,498	72.69	17,709	67.09	22,707	69.60	27,897	67.89
Drugs and chemicals—Insecticides, disinfectants, etc.	35,070	67.72	38,057	71.27	30,337	69.97	33,927	63.08	41,811	75.42
Medicines	146,689	62.63	133,427	58.49	123,428	58.13	157,712	61.95	157,316	58.92
Essential oils	19,092	42.87	14,675	28.91	8,067	24.93	11,517	27.01	11,839	23.07
Acids	11,361	23.08	33,605	31.35	20,518	44.04	24,047	40.48	17,279	35.94
Cyanide of potassium	174,571	84.94	208,773	91.04	196,548	83.63	233,110	88.74	196,198	87.52
Sodas (excl. soda nitrate)	82,699	94.80	72,941	92.35	79,095	92.03	117,228	94.42	125,301	95.43
Fertilisers	100,331	25.79	83,745	18.96	74,014	20.52	124,468	18.58	90,163	17.57
Other drugs	200,009	31.73	168,358	27.68	135,879	23.13	138,943	25.79	161,237	23.08
Musical instruments (not pianos) & parts	29,952	26.74	18,007	21.17	19,958	23.63	26,854	24.09	28,431	21.76
Soap	47,692	46.12	35,574	46.13	34,994	46.44	45,853	43.69	44,314	41.40
Ships	655,760	96.34	672,000	95.98	749,950	99.05	687,500	96.58	241,245	70.94

6. General Conclusions as to Preference.—It will be seen from the foregoing that in order to determine in the early years of preference whether it has been efficient or not, it would be absolutely necessary to have correct records on the same basis for the years preceding the preferential scheme. There is every reason to believe that the records, in many instances, are not sufficiently accurate to allow of just comparisons being made. It is also obvious that a much more detailed analysis is essential than has ordinarily been thought necessary, and it will only be in the course of a number of years that anything like a definite opinion can be reached as to the efficiency of the preferential treatment, for as Professor W. J. Ashley in his preface to Mr. John Holt Schooling's "British Trade Book" says—"No comparison of isolated years, no comparison of short consecutive periods, can be relied upon to give properly comparable data."

Primarily, it will be necessary in some way to eliminate the normal growth in business which would have taken place under any régime whatever in an advancing country; and secondly, the significance of the statistics will depend upon a very rigid adherence to the same method of description in regard to items and the same definition of "Origin." If the practice of recording is as variable in the future as it has been in the past, no real deductions can be drawn, and this goes to shew the importance of maintaining the same method of describing items, quite irrespective of their significance from the standpoint merely of revenue.

In order to determine the course of trade, it will be essential to maintain in its integrity for a sufficient number of years any classification of items once adopted, and no practicable means of analysis will enable one to penetrate the significance of the trade if

that course is not followed, because the determining effect of a preference which, in its nature, is likely to be not too well marked compared with the other elements of growth, can easily be vitiated by the entering of other possibilities of change into the results.

7. **Preferential Tariff of New Zealand.**—"The Preferential and Reciprocal Trade Act 1903" of New Zealand introduced preferential rates of duty in favour of the produce of the British Dominions by imposing extra duties on certain imports which were the produce or manufacture of other countries. The list of preferential items was materially extended by the New Zealand "Tariff Act 1907," from the 31st March, 1908.

The following tables present an analysis of the imports into New Zealand during 1911, distinguishing those which would be affected by an application of the preferential provisions of the "Tariff Act 1907":—

NEW ZEALAND.—IMPORTS, 1911, PREFERENTIAL AND NON-PREFERENTIAL.

Particulars.	From United Kingdom and British Possessions.	From Foreign Countries.	Total.
Imports affected by preferential tariff—	£	£	£
Free	2,113,265	—	2,113,265
Dutiable	3,598,896	1,159,342	4,758,238
Total	5,712,161	1,159,342	6,871,503
Imports not affected by preferential tariff—			
Free	5,784,963	1,518,268	7,303,231
Dutiable	4,091,294	516,580	4,607,874
Total	9,876,257	2,034,848	11,911,105
Total merchandise	15,588,418	3,194,190	18,782,608
Bullion and specie	762,571	700	763,271
Total	16,350,989	3,194,890	19,545,879

NOTE.—In this table the imports affected by the preferential provisions of the tariff are stated, as far as possible, according to the country of origin; those unaffected by preference according to country of shipment, the country of origin of these not being recorded. Without doubt imports from the United Kingdom and British Possessions include goods of foreign origin.

NEW ZEALAND.—IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES, 1911.

FROM UNITED KINGDOM AND BRITISH POSSESSIONS.

Particulars.	Imports.	Duty which would be payable under—			
		Preferential Tariff.		General Tariff.	
	£	£	Rate %	£	Rate %
(A) Free	2,113,265	...	...	379,548	17.96
(B) Dutiable	3,598,896	732,674	20.36	1,077,695	29.94
Total	5,712,161	732,674	12.83	1,457,243	25.51

NEW ZEALAND—IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES,
1911—Continued.

FROM FOREIGN COUNTRIES.

Particulars.	Imports.	Duty which would be payable under—			
		General Tariff.		Preferential Tariff.	
	£	£	Rate %	£	Rate %
Imports similar to group A above	107,539	15,651	14.55	...	...
" " " B "	1,051,803	315,780	30.02	215,774	20.51
Total	1,159,342	331,431	28.59	215,774	18.61

8. **Preferential Tariff of South Africa.**—Preference to goods of United Kingdom origin was first granted by the South African Customs Union Convention of 1903 from the 15th August of that year, and similar treatment was extended to Canada from the 1st July, 1904. The present preferential tariff of the South African Customs Union (Convention, 1906, and amendments, 1908) applies to produce of United Kingdom, Canada, New Zealand and the Commonwealth.

An analysis of the trade of South Africa is appended :—

SOUTH AFRICA.—IMPORTS, 1911, PREFERENTIAL AND NON-PREFERENTIAL.

Particulars.	From United Kingdom and Reciprocating Countries.	From other Countries.	Total.
Imports affected by preferential tariff—	£	£	£
Free... ..	5,489,640	...	5,489,640
Dutiable	16,510,521	9,538,618	26,049,139
Total	22,000,161	9,538,618	31,538,779
Imports not affected by preferential tariff—			
Free... ..	2,317,917	1,421,426	3,739,343
Dutiable	820,276	2,341,237	3,161,513
Total	3,138,193	3,762,663	6,900,856
Total merchandise	25,138,354	13,301,281	38,439,635
Bullion and specie	794,522	330,620	1,125,142
Total	25,932,876	13,631,901	39,564,777

NOTE.—Owing to difficulty in applying the tariff rates to the statistical items, the above results must be taken as approximate only.

From the foregoing it will be observed that the preferential schemes, as at present in force in the different parts of the empire, are by no means uniform. The preferential tariff of New Zealand applies to a wider range of countries than that of any other part of the empire, inasmuch as the advantage of the lower tariff rates is extended to all parts of the British dominions, while those of Canada and South Africa apply to the United Kingdom and reciprocating British Possessions, and that of the Commonwealth to the United Kingdom only. Apart from the British preferential tariff, however, the Commonwealth, in consideration of its participation in the South African preference, gives a preference to certain products of that country. New Zealand and South Africa have also a special reciprocal trade agreement in addition to the main schemes of preference. Canada, under the Customs Tariff Act of 1907, makes provision for an intermediate tariff, which may be applied to the produce of *foreign* countries. Canada already has a reciprocal trade agreement with France.

The margin between the rates of duty applied to British and foreign goods, respectively, is also higher in New Zealand than in the Commonwealth or South Africa, though in the latter countries the preferential tariff affects a greater proportion of the trade. On the basis of the imports into New Zealand during 1911 the average margin of preference was 12.69 per cent. of the value of the goods, while in the Commonwealth the similar margin was 5.08 per cent., and in South Africa 3.08 per cent. The average rate of duty charged in New Zealand on British goods, subject to preferential rates, was 12.83 per cent., while the same goods if of foreign origin would have had to pay 25.51 per cent. In the Commonwealth the collateral rates were 12.99 per cent. and 18.06 per cent. respectively, and in South Africa 10.75 per cent. and 13.84 per cent.

11. South African Preference.—Under the Commonwealth Customs Tariff (South African Preference) Act, No. 17 of 1906, preferential rates of duty were prescribed for certain goods "when those goods are imported from and are the manufacture of any of the British South African Colonies or Protectorates which are included within the South African Customs Union."

Preference to South African States was further confirmed by the Customs Tariff Amendment Act 1908 (No. 13 of 1908).

The imports, during 1911, affected by the above-mentioned Act were as follows:—

IMPORTS INTO THE COMMONWEALTH DURING 1911 OF ARTICLES ENTITLED TO PREFERENCE UNDER THE SOUTH AFRICAN PREFERENCE ACT, AND THE VALUE OF THE PREFERENCE THEREON.

Particulars.	Rate of Rebate.	Imports.		Amount of Rebate.
		Quantity	Value.	
			£	£ s.
Fish—				
Preserved in tins, etc. ... lbs.	½d. per lb.	33,000	1,112	34 7
Grain—				
Maize cental	6d. per cntl.	6,029	1,980	150 14
Feathers—				
Undressed	5 per cent.	—	3,813	190 6
Dressed	10 per cent.	—	174	17 8
Tobacco manufactured—				
Cut lbs.	1/3 per lb.	5,305	666	331 11
N.E.I. lbs.	1/- per lb.	1,411	160	70 11
Total /...	—	—	7,905	794 17

§ 12. Imports of Dutiable and Free Goods.

1. **Classified Statement of Imports.**—The following table shews, classified according to their nature, and distinguishing between dutiable and free goods, the estimated value of imports entered for home consumption during 1911, together with the amount and equivalent *ad valorem* rates of duty collected thereon. As no record is made of the value, entered for home consumption, of goods subject to specific duties, the value has been estimated on the basis of the value of corresponding imports. The free goods entered for home consumption have been taken to be the total imports of free goods less the value of similar goods re-exported.

VALUE OF GOODS (EXCLUDING BULLION AND SPECIE) ENTERED FOR CONSUMPTION IN THE COMMONWEALTH AND DUTY COLLECTED THEREON, 1911.

Classification of Imports.		Value Entered for Consumption.			Duty Collected, less Refunds.	Equivalent <i>ad valorem</i> rate per cent. on—	
		Dutiable.	Free. (Net Imports)	Total.		Dutiable Imports.	All Imports.
		£	£	£	£	%	%
I.	Foodstuffs of animal origin (excluding living animals)	763,665	80,233	843,898	147,580	19.33	17.49
II.	Foodstuffs of vegetable origin and salt ...	1,945,971	195,553	2,141,524	651,210	33.46	30.41
III.	Beverages (non-alcoholic) & substances used in making	412,105	1,191,290	1,603,395	82,841	20.10	5.17
IV.	Spirits & alcoholic liquors, including industrial spirits and pharmaceutical preparations dutiable as spirits ...	1,837,394	556	1,837,950	2,636,029	143.50	143.49
V.	Tobacco and preparations thereof ...	693,759	...	693,759	1,095,862	157.96	157.96
VI.	Live animals ...	70,147	320,950	391,097	835	1.19	0.21
VII.	Animal substances (mainly unmanufactured) not foodstuffs ...	84,270	205,649	289,919	16,230	19.26	5.60
VIII.	Vegetable substances and fibres ...	168,121	1,133,551	1,301,672	47,012	27.96	3.61
IX.	Apparel, textiles, and manufactured fibres ...	10,619,109	7,240,655	17,859,764	2,301,818	21.68	12.89
X.	Oils, fats, and waxes ...	1,078,252	709,377	1,787,629	188,263	17.46	10.53
XI.	Paints and varnishes ...	491,450	22,634	514,084	88,433	17.99	17.20
XII.	Stones and minerals used industrially ...	132,826	39,374	172,200	30,348	22.85	17.62
XIII.	Specie (omitted) ...	...	...	...	...	...	...
XIV.	Metals (unmanufactured) and ores, excluding gold and silver bullion ...	12,632	323,151	335,783	1,924	15.23	0.57
XV.	Metals partly manufactured ...	...	1,144,557	1,144,557	...	...	...
XVI.	Metals manufactured, including machinery ...	8,681,574	5,474,535	14,156,109	1,391,782	16.03	9.83
XVII.	Leather and manufactures of leather and substitutes therefor, also indiarubber and indiarubber manufactures ...	1,063,258	517,283	1,580,541	226,324	21.29	14.32
XVIII.	Wood and wicker, raw and manufactured ...	3,020,972	341,395	3,362,368	500,523	16.57	14.89
XIX.	Earthenware, cements, china, glass, & stoneware ...	1,132,256	93,996	1,226,252	316,233	27.92	25.79
XX.	Paper and stationery ...	906,897	1,902,067	2,808,964	222,973	24.59	7.94
XXI.	Jewellery, timepieces, and fancy goods ...	1,237,733	494,891	1,732,624	318,457	25.73	18.38
XXII.	Optical, surgical, & scientific instruments ...	113,339	370,924	484,263	21,618	19.07	4.46
XXIII.	Drugs, chemicals, and fertilisers ...	466,846	1,690,788	2,157,634	94,288	20.20	4.37
XXIV.	Miscellaneous ...	3,236,934	2,579,215	5,816,149	648,938	20.05	11.16
Total merchandise ...		38,169,511	26,072,624	64,242,135	11,029,521	28.90	17.17
Merchandise, excluding stimulants and narcotics		35,638,358	26,072,068	61,710,426	7,297,630	20.48	11.83

2. **Comparative Rates of Duty.**—Omitting bullion and specie, the proportion of total merchandise entered for "home consumption" free of duty in the undermentioned countries, and also the equivalent *ad valorem* rates of duty charged, are as follows :—

PROPORTION OF FREE GOODS AND RATES OF IMPORT DUTY.

Particulars.	Australia.		Canada.	New Zealand.	U.S. of America.
Year ended	31/12/06	31/12/11	31/3/12	31/12/11	30/6/11
Percentage of free merchandise ...	35.18	40.58	35.70	50.21	50.85
Equival't <i>ad valorem</i> rates of duty on	%	%	%	%	%
Spirits, wines, and malt liquors	153.23	143.49	120.80	154.05	89.78
Tobacco, and preparations thereof	168.65	157.96	22.30*	133.75	85.10†
Other dutiable merchandise ...	17.04	20.48	23.86	22.38	38.02
Other merchandise dutiable & free	10.75	11.83	15.34	10.57	18.06
Total dutiable merchandise ...	27.14	28.90	26.12	34.27	41.22
Total merchandise dutiable & free	17.59	17.17	16.79	17.06	20.29
Customs duty per head	£ s. d. 1 15 10	£ s. d. 2 9 2	£ s. d. 2 5 0	£ s. d. 3 2 5†	£ s. d. 0 13 6

* Unmanufactured tobacco is admitted to Canada free of duty. † Exclusive of Maoris.

† Tobacco is admitted free of Customs duty from the Philippine Islands.

In 1906—the last full year of operation of the 1902 tariff—free goods represented 35.18 per cent. of the total imports of merchandise into the Commonwealth. The tariff of 1908 extended the free list so that in 1908 the proportion of free goods increased to 39.69 per cent., in 1909 to 41.10 per cent., in 1910 to 42.80 per cent., and in 1911 to 40.58 per cent. This gradual increase in the proportion of free goods, under the same tariff, appears to indicate some restrictive effect of the protective duties, inasmuch as the imports of free goods, which may be taken as raw materials or goods which cannot yet be advantageously manufactured in Australia, have increased by 30.96 per cent. since 1908, while those of dutiable goods have only increased by 15.20 per cent. The tariff of 1908, while extending the free list, increased the average rates on the goods subject to duty. Excluding drinks and tobacco the average rate of duty on dutiable goods during 1906 was 17.04, in 1908 it was 21.30, in 1910 it was 21.26, and in 1911 it was 20.48 per cent. The combined effect of the extension of the free list with an increase of duties on the remaining goods has been that in 1911 the average rate of duty over the total imports of merchandise was 17.17 per cent., against 17.59 per cent. in 1906.

From the above table it will be seen that, excluding spirits, etc., and tobacco, the average rate of duty charged in the Commonwealth on dutiable goods imported during 1911 was about 1.90 per cent. *ad valorem* lower than in New Zealand, and about $3\frac{1}{2}$ per cent. lower than in Canada, and was only a little more than one half the rate charged in the United States. On the other hand the proportion of free goods was smaller in the Commonwealth than in New Zealand or the United States, though larger than in Canada. Over the total imports the average *ad valorem* rates charged in the Commonwealth, New Zealand, and Canada do not differ materially, while in the United States the average rate is about $3\frac{1}{2}$ per cent. higher. The influence of the various rates charged on stimulants and tobacco in smoothing out the differences in average *ad valorem* rates on the total imports should not be lost sight of. During 1911, 80 per cent. of the value of tobacco imported into Canada was unmanufactured tobacco admitted free of duty, and subject only to excise on manufacture.

SECTION XVI.

SHIPPING.

§ 1. General.

1. Legislation.—The shipping of the Commonwealth has hitherto been conducted partly under Imperial Acts, consolidated in the Merchants Shipping Act of 1894, and amendments of these, and partly under Acts of the several States of the Commonwealth. Since the scope of the local enactments differs materially in the different States, to define the proper limits of the jurisdiction of the Imperial and State laws cannot here be attempted.

By section 98, Part IV., of the Commonwealth Constitution Act, the power to make laws with respect to trade and commerce was extended to navigation and shipping, and in pursuance of this power a Bill for an Act relating to Navigation and Shipping was introduced into the Senate on the 17th March, 1904, but was not proceeded with.

On the 29th June, 1904, a Royal Commission was appointed to inquire into the Bill and report upon its provisions and any matter incidental thereto. In March and April, 1907, a conference between representatives of the United Kingdom, the Commonwealth of Australia, and New Zealand was held in London on the subject of merchant shipping legislation. The result of the deliberations was that an amended Bill was introduced into the Senate on the 12th September, 1907. Owing to pressure of Parliamentary business, however, the consideration of the Bill was held over, and, although reintroduced in 1908, and again in 1910, was not passed until 24th December, 1912. The Bill is reserved for Royal assent. The Bill has been drawn largely on the Merchants Shipping Acts and the Acts of New Zealand and New South Wales, and contains 425 sections divided into eleven parts, as follows:—I. Introductory. II. Masters and Seamen. III. Foreign Seamen. IV. Ships and Shipping. V. Passengers. VI. The Coasting Trade. VII. Wrecks and Salvage. VIII. Pilots and Pilotage. IX. Courts of Marine Inquiry. X. Legal Proceedings. XI. Miscellaneous.

In consideration of the doubt existing as to the extent of the powers of the Commonwealth in relation to shipping it has been provided in the Act itself as follows:—Section (2) "This Act shall be read and construed subject to the Constitution, and so as not to exceed the legislative power of the Commonwealth, to the intent that where any enactment thereof would, but for this sub-section, have been construed as being in excess of that power, it shall nevertheless be a valid enactment to the extent to which it is not in excess of that power."

2. Record of Shipping before Federation.—Prior to Federation it was customary for each State to regard the matter of shipping purely from the State standpoint, and vessels arriving from or departing to countries beyond Australia, via other Australian States, were recorded as if direct from or to the oversea country. Thus a mail steamer from the United Kingdom, which made Fremantle her first port of call in Australia, would be recorded not only there, but also again in Adelaide, Melbourne and Sydney, as an arrival from the United Kingdom. Consequently any aggregation, especially of the recent shipping records of the different States, would repeatedly include a large proportion of the shipping visiting Australia. In earlier years, when many vessels sailed from the

various State ports direct for their destination, the error of repeated inclusion was less serious, but as the commerce of Australia developed, more and more ports of call were included in the voyage of each vessel, and this made the mere aggregation of State records correspondingly misleading. It has, as a matter of fact, led to some erroneous publications of statistical results and deductions.

3. Shipping since Federation.—With the inauguration of the Commonwealth, the statistics of its shipping, especially of its oversea shipping, became of greater intrinsic importance. As an index of the position of Australia among the trading countries of the world, such statistics had a constitutional importance commensurate with Commonwealth interests, and correspondingly greater than those of individual States, and the nationality of the shipping trading with Australia became also a matter of greater moment.

4. Difficulties of Comparisons of Total Shipping.—From what was said in paragraph 2 above, it is obviously impossible now to obtain results for Australia not subject to the defect of repeated inclusions of the same vessels. Unfortunately the statistical records of the first three years of Federal history are subject to the same defect, and do not admit of direct comparison with those now kept. A careful estimate of the extent and effect of repeated inclusion has been made and applied to the records of the earlier years, so as to extend the comparative results to those years. The error of such estimation will be negligible for comparative purposes.

5. Present System of Record.—The present system of record treats Australia as a unit, and counts, therefore, only one entry and one clearance for each visit to the Commonwealth. Repeated voyages of any vessel are of course included.

On arrival of every vessel at a port in the Commonwealth, whether from an oversea country or from another port within the Commonwealth, the master is required to deliver to the Customs officer a form giving all particulars, necessary for statistical purposes, in regard to the ship, passengers and crew. Similarly on departure from a port a form containing corresponding information is lodged. These forms, which provide a complete record of the movements of every vessel in Commonwealth waters, are at the end of each month forwarded by the Customs officer at each port to the Commonwealth Bureau of Statistics, and furnish the material for the compilation of the Shipping and Migration Returns.

Under the system previously in force it was found that the estimates of population, in so far as they were based on seaward movement, were very unsatisfactory, and it is believed that the method referred to above will give decidedly better results.

§ 2. Oversea Shipping.

1. Total Oversea Shipping.—In order to extend, as indicated, the comparison of the oversea shipping to the earliest years for which any records are available, an estimate of its probable amount has been made. This estimate is based on a comparison of the results obtained by merely aggregating State statistics with the defect of multiple records, and the results obtained under the present system, which avoids the multiple record. From the nature of the case it is obvious that the ratio of repeated inclusion to the total traffic has been continually advancing, and this fact has been duly taken into account in deducing the results in the following table:—.

**TOTAL OVERSEA SHIPPING ENTERED AND CLEARED THE COMMONWEALTH, 1822
to 1911 (MULTIPLE RECORD EXCLUDED BY ESTIMATION PRIOR TO 1904).**

Year.	Vessels.	Tons.	Year.	Vessels.	Tons.	Year.	Vessels.	Tons.
1822	73	30,683	1852	1,896	844,243	1882	3,652	3,010,944
1823	76	30,543	1853	3,364	1,490,432	1883	3,857	3,433,102
1824	71	29,029	1854	3,781	1,744,251	1884	4,315	4,064,947
1825	80	30,786	1855	3,239	1,449,657	1885	4,052	3,999,917
1826	65	23,587	1856	2,669	1,195,794	1886	3,793	3,853,246
1827	95	29,301	1857	2,842	1,530,202	1887	3,454	3,764,430
1828	124	38,367	1858	2,607	1,378,050	1888	3,933	4,464,895
1829	185	56,735	1859	2,759	1,403,210	1889	3,897	4,460,426
1830	195	56,185	1860	2,464	1,288,518	1890	3,363	4,150,027
1831	185	52,414	1861	2,466	1,149,476	1891	3,778	4,726,307
1832	206	59,628	1862	2,917	1,389,231	1892	3,432	4,239,500
1833	241	72,647	1863	3,378	1,564,369	1893	3,046	4,150,433
1834	249	77,068	1864	3,344	1,537,433	1894	3,397	4,487,546
1835	310	96,928	1865	3,005	1,317,934	1895	3,331	4,567,883
1836	310	93,974	1866	3,378	1,470,728	1896	3,309	4,631,266
1837	442	113,432	1867	2,927	1,277,679	1897	3,279	4,709,697
1838	471	132,038	1868	3,080	1,350,573	1898	3,222	4,681,398
1839	652	191,607	1869	3,107	1,472,837	1899	3,356	5,244,197
1840	915	277,335	1870	2,877	1,381,878	1900	3,719	5,894,173
1841	900	278,738	1871	2,748	1,312,642	1901	4,028	6,541,991
1842	862	232,827	1872	2,788	1,380,466	1902	3,608	6,234,460
1843	736	183,427	1873	3,159	1,609,067	1903	3,441	6,027,843
1844	629	155,654	1874	3,153	1,728,269	1904	3,700	6,682,011
1845	735	164,221	1875	3,437	1,914,462	1905	4,088	7,444,417
1846	888	211,193	1876	3,295	1,863,343	1906	4,155	7,966,658
1847	1,033	245,358	1877	3,157	1,930,434	1907	4,394	8,822,866
1848	1,182	305,840	1878	3,372	2,127,518	1908	4,051	8,581,151
1849	1,137	355,886	1879	3,344	2,151,338	1909	3,910	8,516,751
1850	1,300	425,206	1880	3,078	2,177,877	1910	4,048	9,333,146
1851	1,576	615,061	1881	3,284	2,549,364	1911	4,174	9,984,801

It will be borne in mind that while the above figures in themselves have no absolute significance, nevertheless, on the assumption that the element of duplication has been in fairly constant ratio, they furnish the best available indication of the growth of Australian oversea shipping.

2. Comparison with other Countries.—The place of Australia among various countries in regard to oversea shipping is indicated in the following table, both absolutely and in respect of tonnage per head of population:—

OVERSEA SHIPPING OF VARIOUS COUNTRIES.

Country.	Year.	Tonnage Entered and Cleared.		Country.	Year.	Tonnage Entered and Cleared.	
		Total.	Per Inhabitant.			Total.	Per Inhabitant.
Argentine Rep. ...	1907	22,994,473	4.1	Japan ...	1910	40,391,341	0.8
Belgium ...	1910	30,175,232	4.0	New Zealand	1911	2,953,438	2.9
Canada ...	1910	22,297,186	3.1	Norway ...	1910	9,922,385	4.1
Commonwealth	1911	9,984,801	2.2	S. African Un.	1911	10,856,610	1.8
Denmark ...	1910	16,503,364	6.0	Sweden ...	1909	20,243,350	3.7
France ...	1910	58,733,994	1.5	United K'dom	1911	138,909,341	3.1
Germany ...	1909	44,611,618	0.7	United States	1911	64,755,736*	0.7
Italy ...	1909	51,733,416	1.5				

* Exclusive of Northern Border and Lake Ports.

3. Shipping Communication with various Countries.—Particulars of the number and tonnage of vessels recorded between Australia and various countries, distinguishing

British from foreign countries, are given in the following tables, the table below shewing the tonnage of vessels which were recorded as having entered the Commonwealth from the particular countries mentioned; that on page 653 shews the tonnage of vessels which were recorded as having cleared the Commonwealth for the particular countries, while on page 654 is shewn the total number and tonnage of vessels recorded as entered and cleared from and to the countries named.

SHIPPING TONNAGE ENTERED AND CLEARED THE COMMONWEALTH FROM AND TO VARIOUS COUNTRIES, 1907 to 1911.

ENTERED.

Country.	1907.	1908.	1909.	1910.	1911.
United Kingdom ...	1,093,866	1,146,118	1,243,115	1,377,151	1,464,057
Canada ...	87,686	87,682	89,990	108,727	107,932
Fiji ...	56,861	44,016	54,462	49,493	77,745
Hong Kong ...	104,959	66,114	41,521	22,327	17,880
India and Ceylon ...	81,679	105,728	99,762	169,800	99,196
Mauritius ...	8,005	8,137	35,366	43,133	23,443
New Zealand ...	702,373	794,488	737,899	766,777	841,746
Papua ...	16,438	30,369	42,803	47,881	78,468
South African Union	197,039	88,677	207,619	208,140	289,229
South Sea Islands	34,049	57,694	57,341	64,164	61,983
Straits Settlements	72,407	133,601	104,284	89,731	97,735
Other British Countries	6,935	3,370	4,310	13,588	324
Total British Countries ...	2,462,297	2,565,994	2,718,472	2,960,912	3,159,738
Africa, Portuguese East ...	29,350	32,180	89,506	96,966	74,083
Belgium ...	...	17,242	11,548	15,273	18,734
Chile ...	414,804	238,460	81,433	111,504	182,460
Dutch East Indies	20,364	27,831	78,203	72,212	43,458
France ...	101,439	81,713	113,964	99,308	83,627
Germany ...	287,850	270,135	276,021	290,834	314,167
Hawaiian Islands	53,584	21,138	38,011	32,020	17,167
Japan ...	189,747	185,633	136,340	153,547	157,533
Mexico ...	50,208	21,562	36,443	24,366	16,481
New Caledonia ...	64,401	57,630	63,250	62,542	71,390
Norway ...	29,000	29,417	36,094	37,201	40,204
Peru ...	75,850	47,247	50,291	27,051	32,922
Philippine Islands	113,904	174,042	75,977	28,550	56,603
South Sea Islands (foreign)...	19,661	30,899	30,990	37,684	56,878
Sweden ...	25,193	33,589	46,317	41,231	77,983
United States ...	411,636	354,625	290,520	338,587	389,208
Other Foreign Countries	122,778	106,342	187,814	178,032	200,584
Total Foreign Countries...	2,009,769	1,729,685	1,642,722	1,646,908	1,833,482
Total all Countries	4,472,066	4,295,679	4,361,194	4,607,820	4,993,220

SHIPPING TONNAGE ENTERED AND CLEARED, ETC.—(Continued.)

CLEARED.

Country.	1907.	1908.	1909.	1910.	1911.
United Kingdom ...	1,077,830	963,548	1,239,669	1,467,925	1,537,084
Canada ...	43,428	51,248	53,541	50,510	54,732
Fiji ...	67,750	66,890	49,890	53,713	90,574
Hong Kong ...	100,056	66,083	48,751	31,145	19,155
India and Ceylon ...	131,194	173,530	153,863	139,584	143,632
Mauritius ...	1,992	2,687	5,048	9,396	2,953
New Zealand ...	821,719	873,077	880,668	975,121	1,044,013
Papua ...	18,313	25,232	43,802	50,552	71,811
South African Union ...	71,457	50,539	48,485	92,070	85,346
South Sea Islands ...	22,886	50,397	31,707	43,539	38,133
Straits Settlements ...	101,750	165,313	139,313	156,704	127,725
Other British Countries ...	2,322	...	...	2,924	...
Total British Countries	2,460,692	2,488,544	2,694,737	3,073,183	3,215,158
Africa, Portuguese East ...	25,103	8,535	19,697	18,716	6,949
Belgium ...	65,890	102,187	128,670	115,121	163,397
Chile ...	556,005	457,477	300,451	342,478	393,642
Dutch East Indies ...	24,099	59,412	61,753	105,293	115,499
France ...	85,710	81,226	63,490	113,226	155,506
Germany ...	236,617	252,881	279,526	312,128	321,502
Hawaiian Islands ...	42,245	46,009	26,253	32,520	26,200
Japan ...	56,243	110,486	90,732	102,183	103,550
Mexico ...	21,166	31,455	9,675	13,146	13,565
New Caledonia ...	59,805	67,668	72,234	47,071	62,165
Peru ...	78,664	59,530	36,568	52,243	70,960
Philippine Islands ...	151,202	178,631	124,816	106,087	102,748
South Sea Islands (foreign)	32,769	34,452	39,175	57,790	50,022
Sweden ...	...	2,530	4,084	...	...
United States ...	395,192	200,628	142,274	184,153	145,926
Other Foreign Countries	59,398	103,821	61,422	49,988	39,792
Total Foreign Countries	1,890,108	1,796,928	1,460,820	1,652,143	1,776,423
Total all Countries ...	4,350,800	4,285,472	4,155,557	4,725,326	4,991,581

The figures in the above table represent the tonnage of shipping recorded as having cleared the Commonwealth for the particular countries named. For the purpose of comment, however, countries have been grouped according to larger geographical divisions in Section 4.

SHIPPING TONNAGE ENTERED AND CLEARED THE COMMONWEALTH FROM AND TO VARIOUS COUNTRIES, 1907 to 1911.

Country.	1907.	1908.	1909.	1910.	1911.
United Kingdom ...	2,171,696	2,109,666	2,482,784	2,845,076	3,001,141
Canada ...	131,109	138,930	143,531	159,237	162,664
Fiji ...	124,611	110,906	104,352	103,206	168,319
Hong Kong ...	205,015	132,197	90,272	53,472	37,035
India and Ceylon ...	198,769	269,239	243,240	309,384	242,828
Mauritius ...	9,997	10,824	40,414	52,529	26,396
New Zealand ...	1,524,092	1,667,565	1,618,567	1,741,898	1,885,759
Papua ...	34,751	55,601	86,605	98,433	150,279
South African Union ...	268,496	139,216	256,104	300,210	374,575
South Sea Islands ...	56,935	108,091	89,048	107,703	100,116
Straits Settlements ...	174,157	298,914	243,597	246,435	225,460
Other British Countries ...	23,361	13,389	14,695	16,512	324
Total British Countries ...	4,922,989	5,054,538	5,413,209	6,034,095	6,374,896
Africa, Portuguese East ...	54,453	40,715	109,203	115,682	81,032
Belgium ...	65,890	119,429	140,218	190,394	187,131
Chile ...	970,809	695,937	381,884	453,982	576,102
Dutch East Indies ...	44,463	87,243	139,956	177,505	158,957
France ...	187,149	162,939	177,454	212,534	239,133
Germany ...	524,467	523,016	555,547	602,962	636,669
Hawaiian Islands ...	95,829	67,147	64,264	64,540	43,367
Japan ...	245,990	296,119	227,072	255,730	261,083
Mexico ...	71,374	53,017	46,118	37,512	30,046
New Caledonia ...	124,205	125,288	135,484	109,613	133,555
Norway ...	29,000	29,417	38,506	37,201	40,204
Peru ...	154,514	106,777	86,859	79,234	103,882
Philippine Islands ...	285,106	352,673	200,783	134,637	159,351
South Sea Islands (foreign) ...	52,430	65,351	70,165	95,474	106,900
Sweden ...	25,193	36,119	50,401	41,231	77,983
United States ...	806,828	555,253	432,794	522,740	535,134
Other Foreign Countries ...	182,176	210,163	246,824	228,020	240,376
Total Foreign Countries ...	3,899,877	3,526,613	3,103,542	3,299,051	3,609,905
Total all Countries ...	8,822,866	8,581,151	8,516,751	9,333,146	9,984,801

In respect of these tables it may be pointed out that the statistics for any country do not fully disclose the extent of its shipping communication with particular countries. The reason of this is that vessels are recorded as arriving from, or departing to, a particular country, whereas, as a matter of fact, many regular lines of steamers call and transact business at the ports of several countries in the course of a single voyage. The lines of steamers trading between Australia and Japan, for example, often call at New Guinea, the Philippine Islands, China, etc., but, being intermediate ports, these countries are not referred to in the statistical records. Similarly in the case of the large mail steamers passing through the Suez Canal. A steamer may call at Colombo, Aden, Port Said, Genoa, Marseilles, London, Antwerp, and Bremerhaven, yet obviously can only be credited as cleared for one of these ports to the consequent exclusion of all the other ports from the records. Further reference is made in the following paragraphs to the more important of those countries with which the shipping of the Commonwealth is not fully represented in the foregoing tables.

4. General Trend of Shipping.—(i.) *General.* A grouping of countries into larger geographical divisions, as in the following tables, shews more readily the general direction of Australian shipping, and to some extent, avoids the limitations of the records in relation to particular countries, by covering more closely the main trade routes.

It has already been shewn in the opening section of this chapter, that direct comparisons of the annual oversea shipping of the Commonwealth are possible only since the beginning of 1904.

A comparison of the total tonnage of shipping which entered and cleared the Commonwealth during 1911 with similar records for 1907 shows an increase of 1,161,935 tons, or 13.17 per cent., vessels with cargo having increased by 1,800,228 tons, or 25.78 per cent., while vessels in ballast decreased by 638,293 tons, or 34.70 per cent. The increase of shipping since 1907 between the Commonwealth and the United Kingdom and European countries represents a tonnage greater than the aggregate increase during the same period, the tonnage to and from the American continent having materially declined.

(ii.) *Shipping with the United Kingdom and European Countries.* The shipping between the Commonwealth and the United Kingdom and European countries during the past five years shows that steady increase which indicates the consistent development of a well-established trade. The shipping in this direction during 1911 amounted to 4,212,805 tons, or 42.2 per cent. of the total oversea shipping of the Commonwealth, and was recorded against the several countries as follows:—United Kingdom, 3,001,141 tons (71.2 per cent.); Germany, 635,669 tons (15.1 per cent.); France, 239,133 tons (5.7 per cent.); Belgium, 187,131 tons (4.4 per cent.); other European countries, 149,731 tons (3.6 per cent.).

The foregoing figures appear to shew that while the tonnage between the Commonwealth and the United Kingdom increased by 829,445 tons, equal to an increase of 38.19 per cent., the tonnage between the Commonwealth and European continental countries has increased by 354,328 tons, or by 41.33 per cent., or in other words that 70.07 per cent. of the increase was credited to the United Kingdom and 29.93 to the latter countries. As already explained, however, no real significance can be attached to these figures, for in many instances it must be regarded as almost accidental whether tonnage be recorded against the United Kingdom or against Belgium, Germany, or France.

The failure of the statistical records to present, in all cases, the full measure of the shipping communication between particular countries is illustrated by the case of Italy. Although the mail steamers which pass through the Suez Canal call at Naples and Genoa, and during 1911 embarked or landed at those ports 4051 passengers for or from Australia, and also carried a direct trade valued at £802,160 between Italy and the Commonwealth, the records for the year shew only two vessels as passing between the two countries.

(iii.) *Shipping with New Zealand.* The tonnage of shipping between the Commonwealth and New Zealand shows a very satisfactory expansion from 1,524,092 tons in 1907 to 1,885,759 tons in 1911, an increase of 361,667 tons, or 23.73 per cent., during the four years. The shipping with New Zealand represented 18.89 per cent. of the total shipping of the Commonwealth during 1911.

(iv.) *Shipping with Asiatic Countries and Islands in the Pacific.* The total tonnage between the Commonwealth and Eastern countries during 1911 amounted to 1,822,057 tons, or 18.25 per cent. of the whole, representing an increase of 136,830 tons, or 8.12 per cent., as compared with 1907. The tonnage between China, Singapore, and Hong Kong collectively fell, largely in consequence of smaller exports of coal, from 412,796 tons in 1907 to 267,465 tons in 1911, while Japan increased by 15,093 tons (6.14 per cent.). The tonnage recorded as to and from India and Ceylon rose from 198,769 tons in 1907 to 242,828 tons in 1911. This tonnage, which is much below that of the previous year, does not, of course, include steamers to or from the United Kingdom or other countries calling at Colombo *en route*. The tonnage recorded as to and from the Philippines shows a very rapid decline during the years 1909 and 1910, though some increase again appears in 1911. The shipping tonnage between Australia and the Philippines has also been affected largely by the coal trade, which has been latterly of much smaller dimensions than in 1907. Owing to the limitation of the records, already alluded to, the figures given in the tables do not represent the full volume of the shipping between the Commonwealth and the Philippines. In addition to the shipping recorded to the Philippine Islands the regular steam lines between the Commonwealth and Japan make Manila a regular port of call, and it is by these vessels that the general trade—apart from the coal trade—is

chiefly carried. The whole of the shipping which was recorded as entering the Commonwealth during 1911 from the Philippines (56,603 tons) was with the exception of 3584 tons, in ballast, and of the 102,748 tons which was recorded as cleared for that country, 78,249 tons cleared from the coal port of Newcastle. The tonnage between the Commonwealth and Papua has increased rapidly, though consistently, during the past five years, in 1907 the tonnage recorded between these two countries being 34,751 tons, and 150,279 tons in 1911. There has also been a very marked expansion of the shipping to and from the Dutch East Indies during later years, the tonnage having increased from 44,463 in 1907 to 158,957 in 1911. The shipping with the South Sea Islands, too, shews an expanding trade.

(v.) *Shipping with Africa.* The shipping tonnage recorded between the Commonwealth and African countries during 1911 amounted to 501,789 tons, an increase as compared with 1907 of 151,208 tons. Much of the trade between South Africa and Australia, however, is carried by steamers calling at ports in the former country on their voyages between the Commonwealth and the United Kingdom, and which are not shewn in relation to African ports in the shipping returns. Shipping tonnage with African countries—mainly confined to Cape Colony, Natal, and Portuguese East Africa—rose from 565,759 tons in 1904, to 649,802 tons in 1905, but fell to 527,574 tons in 1906, to 350,581 tons in 1907, and to 225,798 in 1908, so that the figures for 1911 indicate a very material increase during recent years. An inspection of the following tables, however, shews that these figures are of no significance as an index of the transport requirements between the two countries, inasmuch as of the total tonnage passing between the two countries 395,468 tons were from Africa to Australia, with only 106,321 the other way. Moreover, of the 395,468 tons which entered the Commonwealth from Africa, 368,750 tons, or 93.2 per cent., were represented by vessels in ballast seeking freights from Australian ports.

(vi.) *Shipping with North and Central America.* The shipping of the Commonwealth with these countries during 1911 amounted to 727,844 tons (7.3 per cent. of the whole) representing as compared with 1907 a decline of 291,504 tons. The large tonnage between the Commonwealth and North America during 1907 was due to unusually heavy exports of coal to the United States. The 727,844 tons of shipping with North and Central America during 1911 were recorded against the several countries as follows:—United States, 535,134 tons (73.5 per cent.); Canada, 162,664 tons (22.4 per cent.); and Mexico, 30,046 tons (4.1 per cent.).

(vii.) *Shipping with South America.* The shipping between the Commonwealth and South American countries during 1911—834,547 tons—was 37 per cent. greater than in 1909, though still less than in 1908. The shipping in this direction during 1911 was mainly engaged in the carriage of coal and wheat to Chile and Peru, and its decline as compared with the earlier years under review is due to the smaller export of coal. Of the total shipping tonnage between the Commonwealth and South America during 1911, 631,570 tons, or 75.7 per cent., is credited to the coal port of Newcastle, 217,507 tons having entered and 414,063 tons having cleared at that port, while of the same total 56,836 tons entered and 11,894 tons cleared at the port of Sydney. Of the South American countries, Chile is responsible for 576,102 tons (69.0 per cent.); Peru, 108,882 tons (12.4 per cent.); Argentine Republic, 62,221 tons (7.5 per cent.); Brazil, 45,840 tons (5.5 per cent.); Uruguay, 40,720 tons (4.9 per cent.); and Ecuador, 5782 tons (0.7 per cent.).

An important fact, from its bearing on freight rates and its consequent possible effect on the coal trade of New South Wales with South America, is the absence of return freights from that country. Of the 354,357 tons of shipping which entered the Commonwealth from South America during 1911 only five vessels, totalling 13,114 tons, carried cargo.

GENERAL DIRECTION OF THE SHIPPING OF THE COMMONWEALTH, 1907 to 1911.

TONNAGE ENTERED.

Countries.	—	1907.	1908.	1909.	1910.	1911.
United Kingdom & European Countries	Cargo...	1,418,211	1,443,331	1,604,822	1,770,356	1,953,962
	Ballast	124,681	142,454	151,792	120,542	68,193
New Zealand	Cargo...	547,065	606,555	610,138	654,215	676,235
	Ballast	155,308	187,933	127,761	112,562	165,511
Asiatic Countries & Islds. in the Pacific	Cargo...	485,703	554,319	620,599	706,225	765,373
	Ballast	381,509	413,089	215,111	156,165	100,500
Africa	Cargo...	22,830	13,506	27,676	30,038	26,716
	Ballast	220,908	133,898	336,605	323,960	368,750
North and Central America	Cargo...	351,223	418,775	350,074	429,021	479,382
	Ballast	200,407	45,094	66,879	43,529	34,239
South America	Cargo...	3,754	9,565	6,189	14,698	13,114
	Ballast	560,467	327,160	243,548	246,508	341,243
	Cargo...	2,828,786	3,046,051	3,219,498	3,604,554	3,914,784
	Ballast	1,643,280	1,249,628	1,141,696	1,003,266	1,078,436
Total		4,472,066	4,295,679	4,361,194	4,607,820	4,993,220

TONNAGE CLEARED.

United Kingdom & European Countries	Cargo...	1,479,952	1,414,973	1,732,264	2,019,567	2,190,650
	Ballast	6,188	5,195	—	—	—
New Zealand	Cargo...	742,257	814,667	807,791	920,939	981,126
	Ballast	79,462	58,410	72,877	54,182	62,887
Asiatic Countries & Islds. in the Pacific	Cargo...	794,069	999,148	841,078	856,486	932,091
	Ballast	23,946	66,934	49,955	76,409	24,093
Africa	Cargo...	106,843	75,559	89,650	136,042	106,321
	Ballast	—	2,835	152	—	—
North and Central America	Cargo...	392,118	212,355	144,491	194,697	182,440
	Ballast	75,600	76,902	60,999	53,112	31,783
South America	Cargo...	639,544	545,225	338,304	407,911	476,385
	Ballast	10,821	13,269	17,996	5,981	3,805
	Cargo...	4,154,783	4,061,927	3,953,578	4,535,642	4,869,013
	Ballast	196,017	223,545	201,979	189,684	122,568
Total		4,350,800	4,285,472	4,155,557	4,725,326	4,991,581

TONNAGE ENTERED AND CLEARED.

Countries.	1907.	1908.	1909.	1910.	1911.	1911 Compared with 1907.
United Kingdom & European Countries	3,029,032	3,005,953	3,488,878	3,910,465	4,212,805	+ 1,183,773
New Zealand	1,524,092	1,667,565	1,618,567	1,741,898	1,885,759	+ 361,667
Asiatic Countries and Islands in the Pacific	1,685,227	2,033,490	1,726,743	1,795,286	1,832,057	+ 136,830
Africa	350,581	225,798	454,083	490,040	501,789	+ 151,208
North and Central America	1,019,348	753,126	622,443	720,359	727,844	— 291,504
South America	1,214,586	895,219	606,037	675,098	834,547	— 380,039
Cargo	6,983,569	7,107,973	7,173,076	8,140,196	8,783,797	+ 1,800,228
Ballast	1,839,297	1,473,173	1,343,675	1,192,950	1,201,004	— 638,293
Total	8,822,866	8,581,151	8,516,751	9,333,146	9,984,801	+ 1,161,935

5. **Nationality of Oversea Shipping.**—As will be seen from the following table, the greater part of the shipping visiting the Commonwealth is of British nationality. During 1911 British shipping represented 74.18 per cent. of the total tonnage which entered and cleared the Commonwealth.

NATIONALITY OF ALL VESSELS WHICH ENTERED AND CLEARED THE COMMONWEALTH FROM AND TO OVERSEA COUNTRIES, 1907 to 1911.

Nationality.	Tonnage.				
	1907.	1908.	1909.	1910.	1911.
BRITISH—					
Australian ...	624,658	657,833	720,183	742,772	848,240
United Kingdom...	4,944,495	4,715,393	4,470,679	5,252,308	5,511,504
New Zealand ...	817,389	926,669	988,006	968,551	1,008,036
Other British ...	13,842	18,726	10,628	26,223	38,871
Cargo ...	5,250,818	5,437,831	5,426,643	6,295,935	6,656,932
Ballast ...	1,149,566	880,790	762,853	693,919	749,719
Total British ...	6,400,384	6,318,621	6,189,496	6,989,854	7,406,651
Per cent. to total	72.54	73.63	72.67	74.89	74.18
FOREIGN—					
Austrian ...	6,121	4,341	—	30,059	—
Danish ...	15,656	11,869	8,848	4,010	10,510
Dutch ...	29,118	56,162	132,954	153,255	139,606
French ...	561,151	521,235	559,383	457,676	424,461
German ...	851,237	910,289	845,758	868,263	1,005,986
Italian ...	130,569	88,364	86,521	93,978	65,415
Japanese ...	78,157	82,209	79,120	89,358	158,047
Norwegian ...	479,982	463,705	440,727	482,637	582,352
Russian ...	50,721	39,999	46,041	33,145	38,463
Swedish ...	35,141	35,117	49,587	51,601	50,207
United States ...	173,588	106,888	56,148	48,477	67,745
Other Foreign ...	11,091	42,352	22,168	30,833	35,358
Cargo ...	1,732,751	1,670,147	1,746,433	1,844,261	2,126,865
Ballast ...	689,731	592,383	580,822	499,031	451,285
Total Foreign ...	2,422,482	2,262,530	2,327,255	2,343,292	2,578,150
Per cent. to total	27.46	26.37	27.33	25.11	25.82
Cargo ...	6,983,569	7,107,978	7,173,076	8,140,196	8,783,797
Per cent. to total...	79.15	82.83	84.22	87.22	87.97
Ballast ...	1,839,297	1,473,173	1,343,675	1,192,950	1,201,004
Per cent. to total...	20.85	17.17	15.78	12.78	12.03
Grand Total ...	8,822,866	8,581,151	8,516,751	9,333,146	9,984,801

The tonnage of Australian-owned vessels engaged in the oversea trade represents 8.49 per cent. of the total, and the tonnage of New Zealand vessels 10.10 per cent. Both are engaged mainly in the trade with New Zealand and eastern countries. An examination of the figures in the above table shews that, of the increase in tonnage in 1911 as compared with 1907, viz., 1,161,935 tons, 1,006,267 tons (*i.e.*, 86.60 per cent.) were British and 155,668 tons (*i.e.*, 13.40 per cent.) were foreign, or, in other words, the British tonnage in 1911 shewed an increase of 15.72 per cent. over 1907, while that of foreign countries only increased by 6.43 per cent. The proportion of British tonnage in the shipping of the Commonwealth was slightly lower during 1911 than in 1910, though higher than in any other year since 1904.

If, however, the tonnage of ships carrying cargo only is considered as indicating more closely the proportion of the actual carrying trade done than does the total tonnage, British shipping does not appear to the same advantage in 1911 as in 1910, the relative proportion of vessels with cargo having fallen from 77.34 per cent. to 75.79 per cent., though the latter proportion shews some advance on that of 1907. The tonnage of British vessels carrying cargo to and from the Commonwealth during 1911, as compared with 1907, shews an increase of 1,406,114 tons, equal to 26.77 per cent., while foreign tonnage with cargo increased by 394,114 tons, or 22.74 per cent. The relative proportion of British and foreign tonnage which entered and cleared the Commonwealth with cargo during the past five years was as follows:—

**PROPORTION OF TONNAGE OF BRITISH AND FOREIGN NATIONALITY ENTERED
AND CLEARED THE COMMONWEALTH WITH CARGO, 1907 to 1911.**

Nationality.	1907.	1908.	1909.	1910.	1911.
British	75.19	76.50	75.65	77.34	75.79
Foreign	24.81	23.50	24.35	22.66	24.21
Total	100.00	100.00	100.00	100.00	100.00

That the proportion of foreign tonnage should increase is to be expected as the natural corollary of the extension of the trade of the Commonwealth with foreign countries. This is particularly patent in regard to Germany and France. Both of these countries desire to increase their mercantile marine, and it is therefore natural that the increased direct trade between themselves and Australia should be carried by their own vessels rather than by the vessels of a third country. Recently, too, the Royal Dutch Packet Company has established a line of steamers between Java and other islands of the East Indies and Australia. The Hungarian Levant Steamship Company has also inaugurated a cargo service between the Commonwealth and Adriatic ports.

The more important competitors for the Australian shipping trade among the foreign nations are Germany, France, and Norway, and it is therefore of interest to consider the general direction of their activity. It is well to bear in mind, when comparing the figures in the table on the next page, that the French shipping from and to France and to New Caledonia is practically identical with the steamers of the Messageries Maritimes, which maintain a regular service between France and New Caledonia *via* Australian ports, and that the German shipping from and to Germany consists mainly of the vessels of two lines, the Norddeutscher Lloyd, and the German-Australian Steamship Company, which have had regular and frequent services to Australian ports for many years.

SHIPPING OF PRINCIPAL FOREIGN NATIONS BETWEEN AUSTRALIA AND OTHER COUNTRIES DURING 1911.

Countries.	Nationality.					
	French.		German.		Norwegian.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
EUROPEAN COUNTRIES—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
United Kingdom ...	25,923	39,387	6,881	38,234	12,499	102,572
Belgium ...	...	...	13,116	17,079	2,289	3,559
France ...	74,374	42,525	...	5,578	1,407	4,119
Germany ...	2,228	3,520	302,735	291,053	...	...
Norway ...	1,949	...	1,391	...	27,356	...
Sweden ...	...	...	30,598	...	24,206	...
Other European Countries ...	3,847	...	2,470	...	1,799	...
NEW ZEALAND ...	5,107	3,082	5,373	5,373	13,759	7,518
ASIATIC COUNTRIES AND ISLANDS IN THE PACIFIC—						
Japan ...	...	...	23,669	23,644	...	...
New Caledonia ...	54,512	59,413	...	...	...	...
Philippine Islands ...	...	...	...	4,515	...	...
South Sea Islands ...	12,082	8,115	4,596	2,024	4,890	7,472
Straits Settlements ...	...	...	1,275	16,996	...	...
Other Asiatic Countries ...	3,082	3,082	1,895	18,620	10,012	13,831
AFRICAN COUNTRIES—						
Africa, Portuguese East ...	...	...	3,953	...	12,388	...
South African Union ...	...	...	5,799	...	33,216	12,144
Other African Countries ...	...	...	...	...	6,215	...
NTH. AMERICAN COUNTRIES—						
United States ...	16,367	41,520	46,803	...	33,128	10,509
Other Nth. Amer. Countries...	...	2,036	9,901	...	12,186	9,342
STH. AMERICAN COUNTRIES—						
Chile ...	3,965	13,510	33,814	70,526	28,518	69,714
Peru ...	...	...	...	3,427	22,702	34,855
Other South American Countries ...	4,835	...	15,148	...	53,947	6,250
With Cargo ...	131,646	180,602	427,173	497,069	126,013	278,333
In Ballast ...	76,625	35,588	81,744	...	174,454	3,552
Total ...	208,271	216,190	508,917	497,069	300,467	281,885

A further analysis is appended, distinguishing between steam and sailing vessels of British and foreign nationality, which entered and cleared the Commonwealth during the years 1907-11. Steam tonnage during 1911 was 2,067,734 tons greater than in 1907, 1,621,099 tons (*i.e.*, 78.40 per cent.) of the increase being British, and 446,635 tons (*i.e.*, 21.60 per cent.) being foreign. The tonnage of sailing vessels shews a decrease during the same period of 905,799 tons, British tonnage having fallen by 614,832 tons, and that of foreign nations by 290,967 tons.

As might be expected, the proportion of sailing vessels engaged in carrying the trade of the Commonwealth is shewn to be rapidly decreasing, having fallen during the period under review from 27 per cent. to 15 per cent. of the total tonnage. In this branch of shipping the foreign element is stronger than the British.

STEAM AND SAILING VESSELS ENTERED AND CLEARED, 1907 to 1911.

Description and Nationality of Vessels.	1907.		1908.		1909.		1910.		1911.	
	Ton-nage.	Percen-tages.	Ton-nage.	Percen-tages.	Ton-nage.	Percen-tages.	Ton-nage.	Percen-tages.	Ton-nage.	Percen-tages.
Steam—										
British ...	5,290,986	82	5,723,288	82	5,583,448	81	6,432,290	82	6,912,085	81
Foreign ...	1,162,413	18	1,259,714	18	1,325,523	19	1,436,917	18	1,609,048	19
Total steam	6,453,399	100 (73)	6,983,002	100 (81)	6,908,971	100 (81)	7,869,207	100 (84)	8,521,133	100 (85)
Sailing—										
British ...	1,109,398	47	595,333	37	606,048	38	557,564	38	494,566	34
Foreign ...	1,260,069	53	1,002,816	63	1,001,732	62	906,375	62	969,102	66
Total sailing	2,369,467	100 (27)	1,598,149	100 (19)	1,607,780	100 (19)	1,463,939	100 (16)	1,463,668	100 (15)
Steam and Sailing—										
British ...	6,400,384	73	6,318,621	74	6,189,496	73	6,989,854	75	7,406,651	74
Foreign ...	2,422,482	27	2,262,530	26	2,327,255	27	2,343,292	25	2,578,150	26
Total ...	8,822,866	100	8,581,151	100	8,516,751	100	9,333,146	100	9,984,801	100

6. Tonnage in Ballast.—The following table shews the tonnage of oversea vessels which entered and cleared the Commonwealth in ballast during the years 1907-11. Of the total British tonnage which entered during 1911, 18.09 per cent. was in ballast, and of foreign tonnage 31.61 per cent. was in similar condition. Of the total tonnage which entered the Commonwealth during 1911, 21.60 per cent. was in ballast, while of the tonnage cleared 2.46 per cent. only was without cargo.

TONNAGE ENTERED AND CLEARED IN BALLAST, 1907 to 1911.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
1907 ...	1,043,383	599,897	1,643,280	106,183	89,834	196,017
1908 ...	794,745	454,883	1,249,628	86,045	137,500	223,545
1909 ...	667,478	474,218	1,141,696	95,375	106,604	201,979
1910 ...	603,511	399,755	1,003,266	90,408	99,276	189,684
1911 ...	668,599	409,837	1,078,436	81,120	41,448	122,568

PROPORTION OF TOTAL BRITISH AND FOREIGN TONNAGE WHICH ENTERED AND CLEARED IN BALLAST, 1907 to 1911.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
1907 ...	32.23	48.60	36.75	3.86	7.56	4.51
1908 ...	25.05	40.51	29.09	2.74	12.07	5.22
1909 ...	21.06	39.80	26.18	3.16	9.89	4.86
1910 ...	17.52	34.88	21.77	2.55	8.41	4.01
1911 ...	18.09	31.61	21.60	2.19	3.23	2.46

Vessels in search of freights arrive in Australia from all parts of the world. The tonnage which entered each State of the Commonwealth, in ballast, during 1911, was as follows :—

**TONNAGE OF OVERSEA VESSELS IN BALLAST WHICH ENTERED EACH STATE OF
THE COMMONWEALTH DURING THE YEAR 1911.**

State	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Tonnage	587,439	35,149	2,363	242,969	151,652	58,864	1,078,436
Percentage of total ...	54.47	3.26	0.22	22.53	14.06	5.46	100

The large exports of coal from New South Wales afford special inducements to vessels in search of freights. During 1911, 587,439 tons, or 54.47 per cent. of all ballast tonnage arriving in Australia, entered in New South Wales, 446,709 tons having entered at the coal port of Newcastle. The tonnage in ballast into New South Wales is mainly for coal cargo, into South Australia for wheat, and into Western Australia for timber. The relatively large tonnage in ballast recorded in Tasmania is mainly due to French vessels—sailing under the bounty system—calling at Hobart for orders.

§ 3. Shipping of Ports.

1. **Shipping of Ports.**—Appended is an abstract of the total shipping tonnage—over-sea and coastwise—which entered the more important ports of Australia during the year 1911, together with similar information in regard to some of the ports of New Zealand and of the United Kingdom for the same year:—

SHIPPING OF PORTS, AUSTRALIA AND VARIOUS COUNTRIES, 1911.

Port.	Tonnage Entered.	Port.	Tonnage Entered.
AUSTRALIA—		ENGLAND AND WALES—	
Sydney	7,769,040	London	19,662,664
Melbourne	5,928,065	Liverpool (inc. Birkenhead) ...	14,612,751
Newcastle	3,807,094	Tyne ports	11,802,365
Port Adelaide	3,104,641*	Cardiff	10,738,059
Brisbane	2,452,782	Southampton	6,841,982
Fremantle	2,038,422	Hull	5,165,763
Townsville	1,222,603	Plymouth	4,475,991
Albany	1,164,389	Newport	3,162,545
Hobart	862,746	Sunderland	3,110,372
Mackay	794,631	Middlesbrough	3,046,712
Rockhampton	756,904	Swansea	2,956,782
Cairns	682,801	Manchester	2,452,647
Port Pirie	576,913	Blyth	2,369,536
Geelong	556,548	Dover	2,332,304
Bowen	514,994	Grimsby	1,875,100
Thursday Island	409,282	SCOTLAND—	
Burnie	333,717	Glasgow	5,695,542
NEW ZEALAND—		Leith	2,350,805
Wellington	2,995,826	IRELAND—	
Lyttelton	2,137,051	Cork (inc. Queenstown) ...	4,230,153
Auckland	1,822,824	Belfast	3,105,624
Dunedin	1,084,269	Dublin	2,641,944

* Exclusive of coastal shipping, particulars of which are not available.

From the figures above it may be seen that the shipping business of the port of Sydney is only exceeded by that of four ports in the United Kingdom, viz., London, Liverpool, the Tyne, and Cardiff.

§ 4. Vessels Built and Registered.

1. Vessels Registered. In the course of recent investigations it has been discovered that the Registers of Shipping in the various States contain particulars of vessels which have been wrecked, broken up, or converted into hulks, etc., and which should have been removed from the registers. The figures hitherto published have consequently been in excess of the truth. A revised statement shewing the number and tonnage of vessels on the Commonwealth Registers will be published in the Appendix to this volume.

2. Vessels Built.—The following tables shew the number and tonnage of vessels built in the Commonwealth during each of the years 1901-1911, so far as such information can be ascertained from the Shipping Registers of the various States. The Merchant Shipping Act, under which vessels are registered in Australia, however, does not make it compulsory to register vessels under 15 tons burthen if engaged in river or coastal trade. Larger vessels are also exempt from registration if not engaged in trade. Yachts and small trading vessels may be, and frequently are, registered at the request of the owners. As the Shipping Registers have been, and are, the source of information, it follows that the figures given below will be subject to additions in the future, inasmuch as vessels already built may be added to the register at some future date.

VESSELS BUILT IN THE COMMONWEALTH.

NUMBER.

Year.	Steamers Built of—					Oil Motor Vessels.	Sailing.	Pontoons, Dredges, etc.	Total.
	Wood.	Iron.	Steel.	Com-posite.	Total.				
1901 ...	18	...	1	...	19	4	37	...	60
1902 ...	26	...	...	1	27	8	72	1	108
1903 ...	15	1	2	...	18	17	148	2	185
1904 ...	14	...	1	1	16	11	74	...	101
1905 ...	15	...	4	...	19	22	15	2	58
1906 ...	12	1	1	...	14	21	17	3	55
1907 ...	16	...	...	1	17	11	31	1	60
1908 ...	13	...	2	...	15	18	15	1	49
1909 ...	10	...	...	...	10	11	29	1	51
1910 ...	9	3	2	...	14	8	31	2	55
1911 ...	12	...	1	1	14	6	28	3	51

TONNAGE.

Year.	Steamers.		Oil Motor Vessels.		Sailing.		Pontoons, Dredges, etc.		Total.	
	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.
1901 ...	2,270	1,251	41	33	1,052	927	...	...	3,363	2,211
1902 ...	2,827	1,627	96	82	2,374	2,052	64	64	5,361	3,825
1903 ...	1,569	956	624	455	3,047	2,599	385	350	5,625	4,360
1904 ...	1,994	1,240	134	100	1,607	1,388	...	...	3,735	2,728
1905 ...	2,444	1,462	291	214	328	280	967	896	4,030	2,852
1906 ...	1,426	735	201	141	466	397	546	536	2,639	1,809
1907 ...	2,288	1,251	97	86	753	698	152	145	3,290	2,180
1908 ...	2,161	1,238	265	199	461	387	179	179	3,066	2,003
1909 ...	1,351	735	180	148	707	592	98	98	2,336	1,573
1910 ...	1,944	1,105	99	89	751	636	405	363	3,199	2,193
1911 ...	1,946	1,038	130	103	651	578	683	641	3,410	2,360

§ 5. Interstate Shipping.

1. **Total Vessels and Tonnage.**—In the following table are shewn the number and tonnage of vessels recorded as having entered each State of the Commonwealth from any other State therein, and similarly the number and tonnage clearing from each State to other Commonwealth States. The table gives results for the quinquennial intervals since 1886. The shipping on the Murray River, between the States of New South Wales, Victoria and South Australia, is not included.

INTERSTATE SHIPPING, 1886 to 1911.—NUMBER OF VESSELS.

ENTERED.

State.	1886.	1891.	1896.	1901.	1906.	1911.
New South Wales ...	1,603	1,692	1,470	1,611	1,575	1,791
Victoria ...	1,433	1,525	1,280	1,502	1,561	1,648
Queensland ...	615	376	439	430	478	567
South Australia ...	550	611	823	650	752	789
Western Australia ...	187	149	520	446	335	415
Tasmania ...	576	680	567	713	840	864
Northern Territory ...	*	*	*	*	*	89
Total ...	4,964	5,033	5,099	5,352	5,541	6,118

CLEARED.

New South Wales ...	1,402	1,415	1,275	1,473	1,417	1,728
Victoria ...	1,615	1,733	1,380	1,569	1,610	1,765
Queensland ...	712	389	455	395	431	572
South Australia ...	620	716	918	756	802	900
Western Australia ...	156	158	496	456	363	394
Tasmania ...	615	679	573	694	809	836
Northern Territory ...	*	*	*	*	*	40
Total ...	5,120	5,090	5,097	5,343	5,432	6,235

TOTAL.

State.	1886.	1891.	1896.	1901.	1906.	1911.
New South Wales ...	3,005	3,107	2,745	3,084	2,992	3,519
Victoria ...	3,048	3,258	2,660	3,071	3,171	3,413
Queensland ...	1,327	765	894	825	909	1,139
South Australia ...	1,170	1,327	1,741	1,406	1,554	1,689
Western Australia ...	343	307	1,016	902	698	809
Tasmania ...	1,191	1,359	1,140	1,407	1,649	1,700
Northern Territory ...	*	*	*	*	*	79
Total ...	10,084	10,123	10,196	10,695	10,973	12,348

* Included with South Australia.

INTERSTATE SHIPPING, 1886 to 1911.—TONNAGE.

ENTERED.

State.	1886.	1891.	1896.	1901.	1906.	1911.
New South Wales	1,181,495	1,617,559	1,589,753	2,031,089	2,456,269	3,318,605
Victoria ...	1,072,381	1,392,818	1,486,624	1,956,900	2,473,771	2,959,551
Queensland ...	355,930	267,753	343,026	545,469	692,354	840,052
South Australia ...	437,502	658,600	1,051,893	1,124,499	1,582,802	1,970,490
Western Australia	127,098	237,708	683,918	973,474	968,664	1,378,800
Tasmania ...	221,061	371,205	281,029	485,023	721,240	895,546
North'n Territory	*	*	*	*	*	64,518
Total ...	3,395,467	4,545,643	5,436,243	7,116,454	8,895,100	11,427,562

CLEARED.

New South Wales	1,014,900	1,314,339	1,341,635	1,856,501	2,177,496	3,209,723
Victoria ...	1,257,967	1,692,189	1,599,065	2,038,424	2,617,966	3,233,531
Queensland ...	411,275	302,723	359,046	440,659	578,561	855,776
South Australia ...	485,368	829,616	1,203,830	1,365,668	1,772,356	2,343,269
Western Australia	116,101	269,256	687,632	977,846	1,051,629	1,303,359
Tasmania ...	251,620	352,406	250,557	433,735	636,944	728,170
North'n Territory	*	*	*	*	*	66,357
Total ...	3,537,231	4,760,529	5,441,765	7,112,833	8,834,952	11,740,185

TOTAL.

New South Wales	2,196,395	2,931,898	2,931,388	3,887,590	4,633,765	6,528,328
Victoria ...	2,330,348	3,085,007	3,085,689	3,995,324	5,091,737	6,193,082
Queensland ...	767,205	570,476	702,072	986,128	1,270,915	1,695,828
South Australia ...	922,870	1,488,216	2,255,723	2,490,167	3,355,158	4,313,759
Western Australia	243,199	506,964	1,371,550	1,951,320	2,020,293	2,682,159
Tasmania ...	472,681	723,611	531,586	918,758	1,358,184	1,623,716
North'n Territory	*	*	*	*	*	190,875
Total ...	6,932,698	9,306,172	10,878,008	14,229,287	17,730,052	23,167,747

* Included with South Australia.

The figures presented in the above table include overseas vessels—largely mail boats—passing from one State to another. This renders the results somewhat unsatisfactory.

In the earlier part of this section attention was drawn to the custom in vogue prior to Federation of recording vessels from or to "overseas countries via other Commonwealth States" as *direct* from or to the overseas country. At each port in Australia these vessels were, on the inward voyage (to Australia), entered as from the overseas country, and

cleared to the next Australian port as "interstate"; on the return journey—the outward voyage—they were entered as "interstate," and cleared as for the oversea country. In order to preserve the continuity of the records of the shipping communication of the several States with oversea countries this method has been followed in continuation of the pre-existing practice, excepting that vessels arriving or departing via other Commonwealth States are now so recorded instead of as "direct."

From the above it will be seen that while certain movements of the vessels referred to are included in the interstate shipping, other movements of the same vessels, between the same ports, are not so included.

To ascertain the aggregate movement of shipping between the States during the year 1911, including the total interstate movements of oversea vessels, the figures in the following table must be added to those of the preceding one:—

SHIPPING ENTERED AND CLEARED FROM AND TO OVERSEA COUNTRIES VIA OTHER COMMONWEALTH STATES, 1911.

State.	Entered.		Cleared.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales ...	523	1,866,050	486	1,717,154	1,009	3,583,204
Victoria ...	453	1,596,579	420	1,524,099	873	3,120,678
Queensland ...	208	793,196	191	763,004	399	1,556,200
South Australia ...	224	972,278	173	659,600	397	1,531,878
Western Australia ...	11	29,929	16	40,777	27	70,706
Tasmania ...	5	12,134	33	174,859	38	186,993
Total ...	(1911) 1,424	5,170,166	1,319	4,879,493	2,743	10,049,659
	(1906) 1,045	3,349,036	1,107	3,442,747	2,152	6,791,783

2. **Total Interstate Movement of Shipping.**—From the foregoing it has been seen that the interstate movement of shipping includes two very different elements, viz.:—(i.) Oversea ships moving from State to State, and (ii.) the movement of ships engaged solely in the interstate carrying trade. These two elements are approximately as follows:—

TOTAL INTERSTATE MOVEMENT OF SHIPPING, 1907 to 1911.

	1907.	1908.	1909.	1910.	1911.
	Tons.	Tons.	Tons.	Tons.	Tons.
Oversea vessels moving interstate ...	5,582,571	5,961,617	5,850,749	6,384,108	6,548,069
Vessels solely interstate	7,514,089	8,258,018	8,204,858	9,223,166	10,049,659
Total ...	13,096,660	14,219,635	14,055,607	15,607,274	16,597,728

The following table shows the number and tonnage of vessels which entered and cleared each State during 1911, including the coastal movements of oversea vessels :—

INTERSTATE SHIPPING OF EACH STATE, 1911.

State.	Entered.		Cleared.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales	2,314	5,184,655	2,214	4,926,877	4,528	10,111,532
Victoria	2,101	4,556,130	2,185	4,757,630	4,286	9,313,760
Queensland	775	1,633,248	763	1,618,780	1,538	3,252,028
South Australia	1,013	2,842,768	1,073	3,002,869	2,086	5,845,637
Western Australia	426	1,408,729	410	1,344,136	836	2,752,865
Tasmania	869	907,680	869	903,029	1,738	1,810,709
Northern Territory	39	64,518	40	66,357	79	130,875
Total...	1911	7,537	16,597,728	7,554	16,619,678	...
	1906	6,586	12,244,136	6,539	12,277,699	...

3. **Vessels Engaged Solely in Interstate Trade.**—The elimination of the element of oversea vessels, included in the interstate shipping returns, cannot be accurately effected; nevertheless a close approximation is furnished if it be assumed that vessels *entered* in the several States as from “oversea countries via other Commonwealth States” have really been *cleared* from other States as “interstate,” and further, that the vessels *cleared* to “oversea countries via other Commonwealth States” have likewise been *entered* as “interstate.” Applying this suggestion, and so eliminating all interstate movements of oversea vessels, the number and tonnage of vessels engaged solely in the interstate trade during the years 1907 to 1911 will be found to be as follows :—

NUMBER AND TONNAGE OF VESSELS ENGAGED SOLELY IN INTERSTATE TRADE, 1907 to 1911.

Year.	Entered.		Cleared.	
	No.	Tons.	No.	Tons.
1907	4,614	5,582,571	4,566	5,580,963
1908	4,706	5,961,617	4,654	5,916,339
1909	4,375	5,850,749	4,353	5,854,313
1910	4,645	6,384,108	4,674	6,471,566
1911	4,794	6,548,069	4,811	6,570,019

This treatment cannot be extended to the individual States, as the records do not disclose the particular relationship of the States concerned.

4. **Interstate and Coastal Services.**—The foundation of the coastal steamship services in Australia dates back to the year 1851, when a regular trade was established between Melbourne and Geelong by the small screw steamer “Express.” Early in the fifties a company was formed in Tasmania with a capital of £40,000 for the purpose of purchasing steamboats, and employing them in the carriage of passengers and goods between Hobart

and Melbourne. This service was commenced in 1852, and was thus the first regular interstate service in Australia. About this time the great influx of population and the increase in commerce, caused chiefly by the gold discoveries, emphasised the desirability of establishing more regular and quicker means of communication between the principal ports of Australia, and in 1862 the regular interstate service between New South Wales and Victoria was inaugurated by the s.s. *You Yangs*, which was put into commission in regular service between Melbourne, Sydney, and Newcastle. In 1875 a company was formed in Adelaide for the purpose of supplying suitable steamers for the requirements of the trade between Adelaide and Melbourne. The first two steamers of the company were named the *South Australian* and the *Victorian*, and were small vessels of only 400 tons burthen. From the start success attended these enterprises, and the services thus initiated were rapidly extended and their operations broadened. Numerous other companies were formed to cope with the increasing trade between ports in the Commonwealth, and the companies engaged from time to time added to their fleets of steamers by the acquisition of more modern and rapid vessels, until at the end of the year 1910 the total net tonnage owned by the twenty-four companies from whom returns have been received amounted to 172,410 tons. A summary of the various mail services carried on during the year 1911 is given in Section XVIII. of this work.

The subjoined table gives particulars, so far as they are available, of all steamships engaged in regular interstate or coastal services at the end of each of the years 1901 and 1907 to 1911. The figures for 1907 and subsequent years include particulars relating to a number of smaller companies which did not supply returns for 1901, though they were, for the most part, carrying on business in that year.

**PARTICULARS OF STEAMSHIPS ENGAGED IN REGULAR INTERSTATE AND
COASTAL SERVICES IN THE COMMONWEALTH, 1901 to 1911.**

Particulars.	1901.	1907.	1908.	1909.	1910.	1911.
Number of companies making returns	11	*22	23	23	24	24
Number of steamships	113	163	175	181	180	178
Tonnage { Gross	184,574	239,548	261,862	283,276	291,470	288,181
{ Net	114,080	146,143	156,502	168,206	172,410	170,062
Horse-power { Nominal	18,237	24,151	25,582	28,477	29,128	29,456
{ Indicated	122,519	176,485	192,140	238,610	245,698	249,388
Number of passengers { 1st class	4,617	6,558	7,100	7,087	7,041	8,616
for which licensed to { 2nd class						
carry { steerage	4,490	6,041	6,156	6,460	6,395	6,256
Complement { Masters and officers	403	535	575	598	600	590
of Crew { Engineers	332	437	471	495	499	491
{ Crew	2,875	3,949	4,121	4,347	4,440	4,369

* See letterpress above.

5. Lighthouses and Lights on the Coast of the Commonwealth.—See Year Book No. 2.

6. Ports of the Commonwealth.—See Year Book No. 3.

§ 6. Shipwrecks.

The following statement shews the number and tonnage of vessels wrecked, or otherwise lost, on the coast of the Commonwealth, or under the jurisdiction of the several States, during the years 1901 to 1911 :—

NUMBER AND TONNAGE OF VESSELS WRECKED,* 1901 and 1903 to 1911.

Year.	Class of Vessel.	Number and Tonnage of Vessels.										Passengers and Crew.	Lives Lost.
		Under 50 tons.		50 to 500 tons.		500 to 2000 tons.		Over 2000 tons.		Total.			
		No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.		
1901	Steam ...	7	189	5	949	2	2,811	...	...	14	3,949	250	40
	Sailing ...	11	217	6	785	5	5,800	...	...	22	6,802	172	10
	Total ...	18	406	11	1,734	7	8,611	...	...	36	10,751	422	50
1903	Steam ...	2	61	5	1,753	2	2,377	...	...	9	4,191	200	11
	Sailing ...	18	306	4	551	2	1,924	...	...	24	2,781	217	10
	Total ...	20	367	9	2,304	4	4,301	...	...	33	6,972	417	21
1904	Steam ...	1	35	2	204	1	886	1	3,702	5	4,827	363	31
	Sailing ...	14	238	6	765	5	4,646	1	2,413	26	8,062	227	59
	Total ...	15	273	8	969	6	5,532	2	6,115	31	12,889	590	90
1905	Steam ...	3	49	2	504	...	...	1	3,325	6	3,968	417	...
	Sailing ...	10	160	5	775	3	3,678	1	2,176	19	6,789	160	57
	Total ...	13	209	7	1,369	3	3,678	2	5,501	25	10,757	577	57
1906	Steam ...	4	89	2	154	...	...	1	2,415	7	2,658	60	12
	Sailing ...	5	77	3	276	1	1,725	2	5,022	11	7,100	105	1
	Total ...	9	166	5	430	1	1,725	3	7,437	18	9,758	165	13
1907	Steam ...	3	71	4	916	3	3,572	...	...	10	4,559	204	16
	Sailing ...	8	162	6	421	5	6,895	...	...	19	7,478	170	29
	Total ...	11	233	10	1,337	8	10,467	...	...	29	12,037	374	45
1908	Steam ...	6	137	7	816	2	2,930	2	5,585	17	9,468	299	37
	Sailing ...	56	775	3	276	3	4,074	1	2,062	63	7,187	348	219
	Total ...	62	912	10	1,092	5	7,004	3	7,647	80+	16,655	647	256
1909	Steam ...	1	48	3	359	1	1,382	1	2,286	6	4,075	131	40
	Sailing ...	6	163	3	362	2	2,681	...	...	11	3,206	88	6
	Total ...	7	211	6	721	3	4,063	1	2,286	17	7,281	219	46
1910	Steam ...	1	34	5	941	1	958	2	9,307	9	11,240	624	2
	Sailing ...	5	115	2	205	2	3,095	...	...	9	3,415	94	20
	Total ...	6	149	7	1,146	3	4,053	2	9,307	18	14,655	718	22
1911	Steam ...	4	109	5	681	3	5,194	...	...	12	5,984	275	161
	Sailing ...	7	103	4	642	4	5,100	...	...	15	5,845	128	25
	Total ...	11	212	9	1,323	7	10,294	...	...	27	11,829	403	186

* In some cases the vessels included in the above return were subsequently recovered. † The large number of wrecks during 1908 was due to cyclones on the north-west coast of Western Australia destroying a large number of the pearling vessels.

§ 7. Wages of Employees on Coastal Vessels.

1.—Rates of Wages of Employees on Vessels engaged in the Coastal Trade of the Commonwealth.—By virtue of Judgments delivered by the President of the Commonwealth Court of Conciliation and Arbitration the minimum rates of wages to be paid per calendar month to persons employed at sea on board vessels engaged in the interstate trade, and on vessels trading within the limits of some one State of the Commonwealth, have been fixed as under:—

MONTHLY WAGES.—MASTERS AND NAVIGATING OFFICERS.

(By Judgment delivered 25th April, 1912.)

Gross Registered Tonnage.		Master.	Chief Officer.	Second Officer.	Third Officer.	Fourth Officer.	Fifth Officer.
PASSENGER VESSELS—INTERSTATE.							
		£	£	£	£	£	£
250 tons and under	...	21	15	12	...	...	...
Over 250 and not over 500 tons	...	23	16	13	...	...	...
" 500 " " 1,000 tons	...	25	16	13	11	10	10
" 1,000 " " 2,000 tons	...	28	17	14	12	10	10
" 2,000 " " 3,000 tons	...	32	18	15	12	10	10
" 3,000 " " 4,000 tons	...	37	19	16	13	10	10
" 4,000 tons	...	43	20	17	14	10	10
CARGO VESSELS—INTERSTATE.							
250 tons and under	...	20	14	12	...	...	...
Over 250 and not over 500 tons	...	22	15	12	...	...	...
" 500 " " 1,000 tons	...	24	15	12	11	10	10
" 1,000 " " 2,000 tons	...	27	16	13	12	10	10
" 2,000 " " 3,000 tons	...	30	17	14	12	10	10
" 3,000 " " 4,000 tons	...	33	18	15	13	10	10
" 4,000 tons	...	36	18	15	13	10	10
PASSENGER VESSELS—WITHIN A STATE.							
125 tons and under	...	20	14	11	...	...	...
Over 125 and not over 250 tons	...	21	15	12	11	10	10
" 250 " " 500 tons	...	23	16	13	11	10	10
" 500 " " 1,000 tons	...	25	16	13	11	10	10
" 1,000 " " 1,500 tons	...	27	17	14	12	10	10
" 1,500 " " 2,000 tons	...	28	17	14	12	10	10
" 2,000 " " 3,000 tons	...	32	18	15	12	10	10
" 3,000 " " 4,000 tons	...	37	19	16	13	10	10
" 4,000 tons	...	43	20	17	14	10	10
CARGO VESSELS—WITHIN A STATE.							
125 tons and under	...	19	13	11	...	...	...
Over 125 and not over 250 tons	...	20	14	12	11	10	10
" 250 " " 500 tons	...	22	15	12	11	10	10
" 500 " " 1,000 tons	...	24	15	12	11	10	10
" 1,000 " " 1,500 tons	...	26	16	13	12	10	10
" 1,500 " " 2,000 tons	...	27	16	13	12	10	10
" 2,000 " " 3,000 tons	...	30	17	17	12	10	10
" 3,000 " " 4,000 tons	...	33	18	15	13	10	10
" 4,000 tons	...	36	18	15	13	10	10

MONTHLY WAGES.—ENGINEERS.

(By Judgment delivered 5th May, 1909.)

Classification of Vessels.	Chief Engin'r.	Second Engin'r.	Third Engin'r.	Fourth Engin'r.	Fifth Engin'r.	Sixth Engin'r.	Seventh Engin'r.
	£ s.	£	£	£	£	£	£
With 100 n.h.p.	20 0	16	14	...	...	...	...
" 100 and within 150 n.h.p.	21 0	16	14	...	...	...	...
" 150 " " 200 "	22 0	17	14	...	...	...	...
" 200 " " 250 "	24 0	18	15	12	...	...	...
" 250 " " 350 "	25 0	18	15	12	...	...	...
" 350 " " 450 "	27 10	19	16	13	...	...	...
" 450 n.h.p. and upwards	29 0	20	16	13	12	11	10

MONTHLY WAGES.—SEAMEN, Etc.

(By Judgment delivered 30th November, 1911.)

	Per Month.		Per Month.
	£ s.		£ s.
Boatswain	9 0	Donkeyman	11 0
A.B., employed as lamp trimmer	9 0	Greaser	10 0
A.B.	8 0	Fireman	10 0
Ordinary Seaman—		Trimmer	8 0
If 18 years or over ...	6 0		
If under 18 years ...	5 0		

MONTHLY WAGES.—MARINE COOKS, Etc.

(By Judgment delivered 27th October, 1908.)

PASSENGER VESSELS—INTERSTATE.

	£ s.		£ s.
Sculleryman	5 10	Second Cook	8 10
Third Cook	6 10	Baker	9 10
Butcher	7 0	Chief Cook	13 10
Ship's Cook	7 10	Galley Boy	3 0

PASSENGER VESSELS TRADING WITHIN THE LIMITS OF SOME ONE STATE.

Chief Cook	12 0	Third Cook, or Third Cook and	
Second Cook	7 0	Butcher	5 0

CARGO AND COLLIER VESSELS.

Chief Cook	10 0	Assistant Cook	3 0
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MONTHLY WAGES.—MARINE STEWARDS AND PANTRYMEN.

(By Judgment delivered 10th May, 1910.)

	£	s.	
Second Steward	7	10	per month
Steward in charge of second saloon	7	10	"
Pantryman (either saloon)	6	10	"
Forecabin Steward	6	10	"
Chief Saloon Steward	6	0	"
Barman and Storekeeper	5	10	"
Stewards of First Grade (including saloon waiter, bedroom steward, smoking-room steward, and each male adult in the stewards' department in either saloon not elsewhere specifically provided for)	5	10	"
Stewards of Second Grade (including bathroom steward, maindeckman, messroom steward, assistant steerage steward, assistant cargo or collier steward, officers' steward, deck steward, second, third or other assistant pantryman, cadets, probationers or boys)	If under 17 years £2 If 17 to 19 years 3 If 19 to 21 years 4 If 21 years or over 5		
Night Watchman—			
If he have at least ten hours leisure per day, including seven hours continuous... ..	£7	0	per month
If not	8	0	"
Cargo or Collier Steward	10	0	"

SECTION XVII.

ROADS AND RAILWAYS.

1. Roads and Bridges.

1. **Introduction.**—In Year Books No. 1 (pages 541 to 551) and No. 2 (pages 675 to 685), a brief historical account was given of the construction and development of roads in Australia. It is not proposed to repeat that account in the present issue of the Year Book.

2. **Expenditure on Roads and Bridges.**—Figures shewing the total expenditure on roads and bridges in the States are not available. The subjoined statement, however, gives the amounts of total loan expenditures by the State Governments up to the 30th June, 1912:—

ROADS AND BRIDGES.—TOTAL LOAN EXPENDITURE OF EACH STATE AND OF THE COMMONWEALTH UP TO THE 30th JUNE, 1912.

State, etc. ...	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.*	C'wealth.
Expenditure	£1,785,813	£176,475	£923,656	£1,464,736	£251,351	£3,839,650	£8,441,681

* Including harbours, rivers, and lighthouses.

The following table shews the annual expenditure from loans on roads and bridges by the central Governments in each State and in the Commonwealth during the year 1901 and from 1907 to 1912.

ROADS AND BRIDGES.—LOAN EXPENDITURE BY STATE GOVERNMENTS, 1901-2 and 1907-12.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1901-2 ...	150,777	47,104	...	185	740	77,536 ¹	276,342
1907-8 ...	1,690	23	...	...	7,956	94,443	104,112
1908-9 ...	...	237	...	...	8,120	136,674	145,031
1909-10 ...	...	50	...	...	24,117	...	24,167 ³
1910-11 ...	...	183	...	...	52,296	80,816	133,295
1911-12 ...	...	...	...	...	35,414	145,556	180,970

1. For the calendar year 1902. 2. Not available separately. 3. Exclusive of Tasmania.

The two tables given above shew only a small proportion of the actual expenditure upon roads and bridges in the different States, for the reason that (a) there have been large expenditures from revenue, both by the central Governments and by local authorities, and (b) the State Governments have in many cases voted grants and subsidies on the amount of rates collected, and have issued loans to local authorities either for the express purpose of the construction of roads and bridges or for the general purpose of public works construction. Returns of expenditure, where available, are given below for each State. Although no revenue is now derived directly from roads and bridges, they are indirectly of great value to the community, forming, next to railways and public lands, the most considerable item of national property.

3. **New South Wales.**—The control of all roads, bridges, and ferries in New South Wales is now regulated by the Local Government Act 1906, which came into force on the 1st January, 1907 (see Section xxvi. *Local Government*). Under the provisions of this Act, the eastern and central divisions of the State are divided into shires and municipalities for the general purposes of local government, for the endowment of which a sum of not less than £150,000 is payable annually out of the consolidated revenue on the basis of a percentage subsidy on the proceeds of the general rates received by the District Councils. The control of all roads, bridges, and ferries (except those proclaimed "National" and those in the unincorporated areas of the Western Division) has been transferred from the Roads Department to the respective shires and municipal councils, who are now responsible for their construction and maintenance. Up to December, 1912, 38 miles of roads, 265 bridges, 54 wharves, 99 jetties, and 12 ferries had been proclaimed as "National" works. Power is given to construct new roads, to widen or close existing roads, to make by-laws for the regulation of traffic, etc.; in the case of the acquisition of land for the purpose of constructing new roads or of widening existing roads, the provisions of the Roads Act 1902 are incorporated. The Minister for Works is empowered to pay subsidies to the local authorities to maintain the roads. The roads leading to and within areas of lands which are made available for closer settlement will be constructed by the Government prior to transfer to the shires, as also will roads required mainly for tourists in districts not likely to produce revenue in rates to the local authorities.

(i.) *Principal Main Roads.* The four principal main roads in New South Wales run in the same direction as, and are roughly contiguous to, the four state-owned main railway lines. (a) *The Southern Road*, 385 miles in length, runs from Sydney to Albury, and before the days of railway construction, formed part of the highway over which the interstate traffic between Melbourne and Sydney used to flow. (b) *The South Coast Road*, 250 miles long, runs from Campbelltown along the top of the coast range and across the Illawara district as far as Bega, from which place it extends as a minor road to the southern limits of the State. (c) *The Western Road*, 513 miles long, runs through Bathurst, Orange and many other important towns as far as Bourke, on the Darling River. (d) *The Northern Road*, 405 miles in length, runs from Morpeth, near Newcastle, as far as Maryland, on the Queensland border.

(ii.) *Length and Classification of Roads and Bridges.* The length of roads in the State (exclusive of 38 miles proclaimed as "National works") in 1912 was approximately 83,194 miles, of which 9514 miles were controlled by municipalities, 67,490 by the shires, and 6190 miles were in the unincorporated areas of the Western Division. The following table gives particulars for the year 1911-12 of roads classified according to whether metalled, etc., formed only, cleared only, or natural surface:—

NEW SOUTH WALES.—APPROXIMATE LENGTH OF ROADS, 1911-12.

Classification.	Metalled, Ballasted, Gravelled etc.	Formed only.	Cleared only.	Natural surface.	Total.
	Miles.	Miles.	Miles.	Miles.	Miles.
Metropolitan...	1,104	321	241	207	1,873
Country Municipalities	2,394	1,413	1,757	2,077	7,641
Shires	10,548	7,535	18,757	30,650	67,490
Western Division	80	137	2,669	3,304	6,190
Total	14,126	9,406	23,424	36,238	83,194

(iii.) *Bridges, Culverts, and Ferries.* The more important bridges have been proclaimed under the provisions of the Local Government Act as "National works" (see above), and these, together with the bridges, etc., in the Western Division, remain under the control of, and are maintained by, the Public Works Department. Particulars of bridges, culverts, and ferries in the State in 1911 are given in the following table:—

NEW SOUTH WALES.—BRIDGES, CULVERTS, AND FERRIES, 1911.

Particulars.	Bridges, 20 ft. span and over.		Culverts.		Ferries.
	No.	Length. ft.	No.	Length. ft.	No.
National works	265	105,322			12
Metropolitan...	126	4,787	626	50,944	3
Country municipalities	618	39,536	3,252	71,838	13
Shires	3,146	188,397	29,560	259,513	91
Western Division (unincorporated)	124	21,815	107	1,435	5
Total	4,279	359,857	33,545	383,730	124

(iv.) *Expenditure on Roads and Bridges.* Since the year 1857 the total expenditure by the Roads Department and Roads Trust on roads and bridges is £24,733,861. In this expenditure is included the cost of administering the Department, services for other Departments, and payments on account of punt approaches and similar works incidental to the road traffic of the country. The amount expended from 1857 to the 30th June, 1900, for the next quinquennium, and for each succeeding financial year up to 1911, is given below. Until recent years, the expenditure on these works increased at a much faster rate than the population.

NEW SOUTH WALES.—EXPENDITURE BY ROAD DEPARTMENTS AND ROAD TRUSTS,
1857 to 1911.

Period.	Expenditure by Roads Department.	Expenditure by Trustees.	Total.
	£	£	£
1857 to 30th June, 1900	18,714,078	1,258,027	19,972,105
1901 to 1905	3,340,299	28,944	3,369,243
1906*	457,421	1,171	458,592
1907*	407,268	549	407,817
1908*	158,005		158,005
1909*	118,121		118,121
1910*	124,652		124,652
1911*	125,326		125,326
Total	23,445,170	1,288,691	24,733,861

* Year ended 30th June.

The expenditure by the Department is now limited to the construction of roads in closer settlement areas and to the construction and maintenance of national bridges and ferries, and of works in the unincorporated areas of the Western Division.

4. **Victoria.**—Under the Local Government Act 1903, the control, construction, and maintenance of all roads, streets, and bridges are in the hands of Municipal Councils, who are empowered to open new roads, and to close, divert, or increase the width of any existing street or road, provided that no new road less than one chain in width may be opened without the consent of the Minister. The councils are also authorised to make and repair streets, lanes, or passages on private property, or forming means of back access to private property, and may compel the owners of such property to pay the cost of so doing. Footways in front of houses or grounds may be kerbed, flagged, paved, or asphalted, and the owners of such houses or grounds must bear half the cost of so doing. The revenue of the councils is derived from rates which may be either ordinary or special. The councils are empowered to raise loans for the purpose of making or opening new streets and roads, and for diverting, altering, or increasing the width of streets and roads, provided that the amount of such loan must not exceed ten times the average income of the council during the three years immediately preceding.

(i.) *General and Local Government Expenditure.* The gross amount expended directly by the State Government of Victoria on roads and bridges was £7,958,212 up to the end of June, 1902. The annual expenditure from ordinary revenue by municipalities is not returned separately, but is included in Public Works Construction and Maintenance (see Section xxvi. *Local Government*). The subjoined table shews the cost from general revenue of municipalities of private streets, roads, etc., and also shews the amounts of municipal loan expenditure in 1901 and from 1907 to 1911:—

VICTORIA.—EXPENDITURE ON ROADS AND BRIDGES, 1901 and 1907-11.

Financial Year. ¹	Annual Expenditure by State Government.	Municipal Loan Expenditure.		Formation of Private Roads, Streets, Lanes, etc. ²	
		Cities, Towns, and Boroughs.	Shires.	Cities, Towns, and Boroughs.	Shires.
	£	£	£	£	£
1901	72,890	16,844	12,928	18,829	4,521
1907	43,119	21,137	7,495	25,244	3,052
1908	72,246	21,859	5,206	30,907	1,811
1909	99,572	21,389	9,058	34,285	3,603
1910	102,309	25,311	18,077	29,304	2,859
1911	67,001	41,247	24,978	41,167	5,682

1. The financial years of Melbourne and Geelong end on the 31st December and the 31st August respectively; those of all other municipalities on the 30th September.

2. Including the cost of flagging, asphaltting footpaths, etc., but exclusive of loan expenditure.

5. **Queensland.**—In Queensland the construction and maintenance of public roads are controlled under a system of local self-government, for the purposes of which the whole State is divided into (a) towns and (b) shires. The duties, rights, and responsibilities of the local authorities with regard to roads, streets, and bridges are regulated by the Local Authorities Act of 1902. The councils are invested with full powers to open, close, divert, or widen streets, roads, and bridges, and to make by-laws for the regulation of traffic, etc. The members of the councils are elected by the ratepayers, and with the aid of

executive officers they undertake the supervision and control of all necessary constructions and improvements of roads and bridges within their district. The rates which the councils are empowered to levy are supplemented by Government grants. Separate returns as to the expenditure by towns and shires on roads and bridges are not available, the amounts being included in the returns of expenditure on public works, particulars as to which expenditure may be found in the Section of this book on *Local Government*.

6. South Australia.—Under the provisions of the District Councils Acts, 1887 to 1904, and the Municipal Corporations Acts, 1890 to 1903, and of the Roads Acts, 1884 to 1908, the councils are invested with full powers as to the opening and making of new streets and roads, and the diverting, altering, or increasing the width of existing roads; as to raising, lowering, or altering the ground or soil of any street or road; and as to the construction, purchase, and management of bridges, culverts, ferries, and jetties.

(i.) *Main Roads and District Roads.* All the roads in each district are classified either as main roads or as district roads. Both classes of roads are under the direct control either of Municipal Corporations or of District Councils, but in the case of main roads the expenditure on construction and maintenance is chiefly provided for by Government grants, which are paid into a main road fund, while the expenditure on district roads is paid for out of general rates, and out of subsidies on the amount of such rates, granted by the central Government. Under the Main Roads Act 1908, a number of roads were declared to be main roads.

The total estimated length of streets and roads in South Australia up to the 30th June, 1911, was as follows:—

SOUTH AUSTRALIA.—ESTIMATED LENGTH OF ROADS AND STREETS, 1911.

Particulars.	Woodblocked.	Macadamised.	Other.	Total.
Miles	$\frac{1}{2}$	8,549	24,928 $\frac{1}{2}$	33,478

(ii.) *Expenditure by Corporations on Main and District Roads.* The following table shews the expenditure by municipal corporations on both main and district roads during 1901-2, and each year from 1907 to 1911 inclusive:—

SOUTH AUSTRALIA.—EXPENDITURE BY CORPORATIONS ON STREETS, ROADS, AND BRIDGES, 1901-2 and 1907-11.

Year. ¹	District Roads.			Main Roads Fund.			
	Total Receipts.	Expenditure.		Receipts.		Expenditure.	
		Con-struction.	Main-tenance.	From Main Road Grants.	Total.	Con-struction.	Main-tenance.
	£	£	£	£	£	£	£
1901 ...	148,872	4,906	50,628	7,403	8,738	159	7,745
1907 ...	154,918	5,697	47,024	6,815	7,506	681	6,703
1908 ...	169,058	3,968	43,588	7,178	7,917	130	8,054
1909 ...	182,145	9,218	63,474	9,679	12,312	258	11,849
1910 ...	186,979	4,031	70,660	14,392	16,000	1,178	13,999
1911 ...	212,506	5,673	63,897	12,935	14,294	1,053	13,634

1. Up to and including the year 1903 the financial year ended on the 31st December, but after that date ends on the 30th November.

(iii.) *Expenditure of District Councils on Main and District Roads.* The following table gives similar information with respect to main and district roads under the control of District Councils:—

**SOUTH AUSTRALIA.—EXPENDITURE BY DISTRICT COUNCILS ON STREETS,
ROADS, AND BRIDGES, 1901 and 1907-11.**

Year Ended 30th June.	District Roads.			Main Roads Fund.			
	Total Receipts.	Expenditure.		Receipts.		Expenditure.	
		Con- struction.	Main- tenance.	From Main Road Grants.	Total.	Con- struction.	Main- tenance
	£	£	£	£	£	£	£
1901 ...	147,809	18,026	47,379	72,980	100,077	11,861	67,487
1907 ...	128,787	27,795	47,731	70,560	70,769	5,598	57,152
1908 ...	134,169	35,161	48,289	80,834	80,875	6,277	70,343
1909 ...	140,552	35,922	60,328	79,194	79,554	10,610	69,387
1910 ...	152,091	33,853	64,079	106,096	106,221	10,752	76,150
1911 ...	164,175	44,289	63,811	110,397	111,182	24,660	82,115

7. Western Australia.—In Western Australia the construction, maintenance, and management of roads and bridges throughout the State, except those within the boundaries of municipalities, are under the control of District Road Boards, constituted by the Roads Act, 1911.

(i.) *District Roads and Bridges.* Under the provisions of this Act any part of the State, not within a municipality, may be constituted by the Governor-in-Council into a Road District, under the control of a Board of not less than five, nor more than eleven members elected by the ratepayers. The Board is invested with full powers for controlling and managing all roads and bridges within the district, and is empowered to make by-laws for the general regulation of traffic, to control the weight of engines and machines permitted to cross any bridge or culvert, to regulate the speed limits of vehicles, lights to be carried by vehicles, the lighting of streets and roads, and the licensing of bicycles and motor cars. A District Road Board may not, however, construct any road or street less than sixty-six feet wide, nor any bridge or culvert at a greater cost than £100, without the consent of the Minister. The construction of the more important bridges and culverts is generally carried out by the Government, the work, after completion, being handed over to the Road Board for maintenance. In case of land being required for the purpose of constructing a new street or road, or for widening an existing street or road, the provisions of the Public Works Act of 1902 are incorporated in the Roads Act. A Board may levy general rates within its district not exceeding two shillings and sixpence nor less than ninepence in the £ on the annual ratable value, and, if valued on the basis of unimproved values of lands, the general rate must not be over threepence nor under one penny in the £ on the capital unimproved value. Boards are also empowered to raise loans for works or undertakings or to liquidate existing loans, but the amount of such loans must not be greater than seven times the average ordinary revenue of the Board. In the case, however, of Boards already indebted, borrowing power to the extent of ten times the said average is given, less the amount of existing loan indebtedness at time of borrowing. For the purpose of paying the interest on money borrowed a Board may levy a special rate. District Road Boards may also exercise the powers of Drainage Boards under the provisions of the Land Drainage Act of 1900.

(ii.) *Municipal Streets, Roads, and Bridges.* As regards roads, streets, and bridges within municipalities, these are under the control of local authorities elected under the provisions of the Municipal Corporations Act 1906. The municipal councils are invested with full powers for making, maintaining, and managing all streets, roads, and bridges within the municipal area, and may request the Governor to declare any such land reserved, used, or by purchase or exchange acquired for a street or way, to be a public highway, and on such request the Governor may, by notice in the *Gazette*, proclaim such highway absolutely dedicated to the public.

(iii.) *Length of Roads, Number of Bridges, and Expenditure on Roads and Bridges.* The following table gives particulars of the operations of the Road District Boards since the 1st January, 1907 :—

WESTERN AUSTRALIA.—PARTICULARS OF ROADS UNDER CONTROL OF DISTRICT ROAD BOARDS, 1907 to 1911.

Year ended the 30th June.	Area.	Revenue.					Expenditure.	Length of Roads.*				No. of Bridges and Culverts.	
		From General Rates.	From Grants and Subsidies.	From other Sources.	Total.	Cleared only.		Formed only.	Metalled or otherwise Constructed.	Total.	Bridges.	Culverts.	
Sq. m.	£	£	£	£	£	Miles.	Miles.	Miles.	Miles.	No.	No.		
1907 ...	975,780	35,088	60,313	13,796	109,197	126,716	9,269 ¹	3,878 ²	2,088 ³	15,235 ⁴	491 ⁵	3,961 ³	
1908 ...	975,780	40,491	58,311	14,707	113,509	120,088	10,821	4,760	2,337	17,918	509	4,148	
1909 ...	975,781	46,084	52,382	15,869	114,285	116,723	13,085 ²	4,645 ³	2,797	20,527	554 ⁴	4,574 ⁴	
1910 ...	975,793	54,115	61,301	14,201	129,617	114,947	14,167	4,622	2,958	21,747	678 ⁵	4,853 ⁵	
1911 ...	975,800	59,302	100,126	16,474	175,902	141,015	15,169	4,874	3,119	23,162	653	5,211	

* Approximate only.

1. Exclusive of six Boards which have not supplied the information. 2. Exclusive of seven Boards. 3. Exclusive of five Boards. 4. Exclusive of three Boards. 5. Exclusive of two Boards.

The following table gives similar information with reference to roads controlled by municipalities under the Municipal Institutions Act 1900 and the Municipal Corporations Act 1906.

WESTERN AUSTRALIA.—PARTICULARS OF STREETS, ROADS, AND BRIDGES UNDER THE CONTROL OF MUNICIPALITIES, 1901 and 1907-11.

Year ended the 31st October.	No. of Municipalities.	Length of Streets and Roads.*					Revenue.		Expenditure.		
		Paved, M't'll'd or Gr'v'lld	Form'd only.	Clear'd only.	Not Clear'd	Total.	From Rates.	From Grants.	Works and Impr'v-ments.	Street Light'g and Wat'r'g	
		Miles.	Miles.	Miles.	Miles.	Miles.	£	£	£	£	
1901 ...	43	195	30	149	137	511	78,021	66,850	111,256	15,969	
1907 ...	47	441	84	304	262 ²	1,091	136,868	85,473	132,103	34,135	
1908 ...	47	474	90	323	271 ¹	1,159	139,228	67,315	103,943	31,682	
1909 ...	46	486	88	323	321	1,217	138,445	37,301	83,283	33,625	
1910 ...	42 ³	525	104	309	297	1,235	138,719	13,336	87,998	30,965	
1911 ...	42	521	105	292	284	1,202	144,993	27,944	75,697	30,341	

* Approximate only.

1. Exclusive of three municipalities, which have not supplied the information. 2. Exclusive of four municipalities. 3. Including also particulars of three municipalities which were dissolved during the year.

8. **Tasmania.**—In 1906 all the existing Road Trusts and Main Road Boards were abolished by the Local Government Act, which provided that the councils of all municipalities constituted under the Act should exercise all powers conferred upon, and should be liable to all the obligations imposed upon Road District Trusts and Main Road Boards by the Roads Act of 1884. The whole State, with the exception of Hobart and Launceston, is divided into municipal districts, each of which is under the control of a warden and councillors, and is deemed to be a road district and a main road district for the purposes of the Roads Act 1884.

(i.) *Mileage of Roads and Number of Bridges.* The following table gives particulars for the year 1911 as to length of roads and number of bridges and culverts under the control of the municipalities:—

TASMANIA.—ROADS AND BRIDGES IN MUNICIPALITIES, 1911.

Roads.			Bridges.	Culverts.
Macadamised or Gravelled.	Other.	Total.		
Miles.	Miles.	Miles.	No.	No.
5,461	5,024	10,485	1,120*	19,702*

* Last available figures.

(ii.) *Revenue and Expenditure.* The following table gives particulars for the year 1911 of the revenue and expenditure of municipal councils in respect of roads and bridges:—

TASMANIA.—ROADS AND BRIDGES, REVENUE AND EXPENDITURE, 1911.

Revenue.				Expenditure.
From Government.	Rates.*	All other.†	Total.	
£	£	£	£	£
35,215	156,585	88,365	280,165	307,334

** Including receipts for power and lighting supplied. † Including current receipts from loans.

§ 2. Railways.

(A) General.

1. **Improvements in Railway Statistics.**—In February, 1909, a report was issued by the Commonwealth Statistician to the Minister for Home Affairs on the subject of *The Desirability of Improved Statistics of Government Railways in Australia*. In this report a number of matters were specified in respect to which there was want of uniformity in the form and basis of the statistics published in the annual reports of the Railway Departments of the several States, and the importance and desirability of obtaining more complete and uniform statistics, especially with regard to "passenger-miles" and "ton-miles," were emphasised. This report was brought forward and considered by the Commissioners and General Managers of the Australian State Railways at their annual conference, held in Melbourne in May, 1909, with the result that resolutions were passed agreeing to publish in the annual reports of State Railway Departments the

uniform statistics regarding all the matters referred to by the Commonwealth Statistician, with two exceptions, viz.:—(a) with respect to the classification of tonnage carried and the revenue derived therefrom (see further (B) paragraph 17 hereof), and (b) with respect to "passenger-mileage" and "ton-mileage" (see further (B) paragraph 18 hereof). The resolutions referred to were to take effect from 1st July, 1909.

2. Railway Communication in the Commonwealth.—Although it was early recognised that railway construction was essential to the proper development and settlement, and to the future commercial prosperity of a large country like Australia, ill supplied with navigable rivers, the progress made in opening up lines during the twenty years which followed the completion of the first line in 1855, was very slow. This was no doubt due partly to the difficulty of borrowing money at a reasonable rate of interest, owing to the depreciation of Australian securities in London, and partly to the sparseness of the population, which it was feared would not justify the necessary expenditure. In the vicinity of Sydney, also, the ranges of mountains in the districts near the coast had to be either traversed or pierced by tunnels at a considerable expenditure of time and money, thus retarding the expansions of the railway systems which now have their starting point at that city. Since the year 1875, however, greater activity in the construction of railways has been manifested, and satisfactory progress has been made in all the States of the Commonwealth. The State Governments now fully recognise the great importance to the community of carrying on the work of construction, and of conducting the administration and management of the railways on business-like principles, free from undue political influence, and yet with regard to the general development of the country. In the eastern, south-eastern, and southern parts of Australia there now exists a considerable network of railway lines converging from the various agricultural, pastoral and mining districts towards the principal ports, which are themselves connected by systems of lines roughly running parallel to the coast. These are shewn on the accompanying map. In the east, lines radiating from Townsville, Rockhampton, Brisbane, and Sydney extend inland in various directions for distances ranging up to over 600 miles; in the south-east there are numerous lines, those in Victoria converging towards Melbourne, while others in New South Wales have their terminus in Sydney; in the south there are three main lines, with numerous branches, running from Melbourne, while from Adelaide one main line, with several branches to the coastal towns, runs inland in a northerly direction for a distance of nearly 700 miles, and another line runs in a south-easterly direction to various ports and meeting the main line from Melbourne on the border of South Australia and Victoria. In addition to these main lines and their numerous branches, there are extensive suburban systems in Melbourne and some of the other cities of Australia, a considerable portion of the suburban traffic in Sydney being conducted by means of electric tramways. All these lines which have just been referred to are connected together by the main interstate line, which permits of direct communication between the four capital cities—Brisbane, Sydney, Melbourne, and Adelaide—a distance from end to end of 1790½ miles. The journey from Brisbane to Adelaide by rail occupies just over three days, including one stop of 9 hours and 15 minutes at Sydney, and another of 3 hours 39 minutes at Melbourne. The distance between the capitals and the times occupied are as follows:—

Brisbane to Sydney	...	725 miles	...	26 hours 55 min.
Sydney to Melbourne	...	582½	...	16 " 51 "
Melbourne to Adelaide	...	482½	...	17 " 26 "

The longest railway journey which can be undertaken in Australia, on one continuous line of railway, is from Longreach in Queensland to Oodnadatta in South Australia, a total distance of 3303 miles. In Western Australia there is a connected system of main or trunk lines between the ports of the State and the agricultural, pastoral, and mining districts. From these main lines a number of branches have been constructed, opening up fresh agricultural areas to the ports and markets of the State. The majority such branch lines will, on being ultimately extended, form connections between

main lines and thus provide short and convenient routes between principal centres. In the northern parts of Queensland and in the Northern Territory there are also a number of disconnected lines running inland from the more important ports. In Tasmania the principal towns are connected by a system of lines, and there are also, more especially in the western districts, several lines which have been constructed for the purpose of opening up mining districts.

3. **Mileage Open for Traffic.**—In all the States of the Commonwealth the principle that the control, construction, and maintenance of the railways should be in the hands of the Government has long been adhered to, excepting in cases presenting unusual circumstances. In various parts of the Commonwealth lines have been constructed and managed by private companies, but at the present time practically the whole of the railway traffic in the Commonwealth is in the hands of the various State Governments. A large proportion of the private lines which are at present running have been laid down for the purpose of opening up forest lands or mining districts, and are not generally used for the conveyance of passengers or the public conveyance of goods. (See D. *Private Railways*, hereinafter.)

(i.) *Mileage of Government and Private Lines, 1855 to 1912.* The subjoined table shews the mileage of both Government and private lines open for traffic (exclusive of sidings and cross-overs) in each State and also in the Commonwealth at suitable periods since the inauguration of railways in Australia in 1855 up to the year 1912. The figures from 1855 to 1881 are given as up to the end of the calendar year; later figures are as up to the end of the financial year ended on the 30th June, unless otherwise stated, excepting the mileages for private lines which are in all cases taken for the calendar year:—

GOVERNMENT AND PRIVATE RAILWAYS.—MILEAGE OPEN, 1855 to 1912.

Year.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wlth.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1855	14	2½	*	†6½	*	*	*	23½
1861	73	114	*	56	*	*	*	243
1871	358	276	218	133	12	45	*	1,042
1881	1,040	1,247	800	845	92	168	*	4,192
1890-1	2,263	2,763	2,205	1,666	†656	†425	145	10,123
1900-1	2,926	3,238	2,904	1,736	1,984	§618	145	13,551
1909-10	*3,909	3,542	4,205	1,970	2,977	673	145	17,421
1910-11	4,027	3,574	4,390	1,993	3,208	675	145	18,012
1911-12	4,908	3,673	4,633	1,997	3,430	701	145	18,677

* No railways yet constructed. † To the 31st December. This line between Goolwa and Port Elliot was opened in 1854 as a horse tramway, but now forms part of the railway system. ‡ To the 31st December, 1891. § To the 31st December, 1901.

It will be seen from the above table that the rate of construction up to the year 1871 was very slow, the average annual length of lines opened from 1861 to 1871 being only 80 miles for the whole Commonwealth. By the middle of the following decade, however, the principal mountain ranges had been crossed, and the work of construction could be proceeded with at a greater rate, and at a less cost per mile. The greatest period of activity was from 1881 to 1891, when the average annual length opened for traffic was 593 miles for the whole Commonwealth; the corresponding figures for the following periods from June 1891 to June 1901, and from June 1901 to June 1911, were 343 and 452 miles respectively.

4. **Comparative Mileage of State-owned and Private Lines, 1912.**—The subjoined table shews for each State and for the Commonwealth (a) the length of lines owned by the respective State Governments, all of which lines are of course open for general use by the

public, (b) the length of private lines available for general use by the public, and (c) the length not so available. The mileages specified in the case of State-owned lines are as up to the 30th June, 1912; those given for private lines are as up to the 31st December, 1911.

GOVERNMENT AND PRIVATE RAILWAYS.—COMPARATIVE MILEAGE OF STATE OWNED LINES, OF PRIVATE LINES AVAILABLE FOR GENERAL TRAFFIC AND OF PRIVATE LINES NOT SO AVAILABLE, 1911-12.

State. ...	State-owned Lines.	Private Lines available for General Traffic.	Total Open for General Traffic.	Private Lines used for Special Purposes only.	Grand Total.
	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales	3,882	141	3,973	125	4,098
Victoria... ..	3,622	14	3,636	37	3,673
Queensland	4,266	346	4,612	21	4,633
South Australia ...	1,989	...	1,939	34	1,973
Western Australia	2,598	277	2,875	555	3,430
Tasmania	496	166	662	39	701
Northern Territory	145	...	145	...	145
Commonwealth	16,898	944	17,842	811	18,653

5. Comparative Railway Facilities in Different States, 1912.—The area of territory and the population per mile of line open to the public for general traffic (including both Government and private lines) on the 30th June, 1912, are shewn in the subjoined statement for each State and also for the Commonwealth:—

GOVERNMENT AND PRIVATE RAILWAYS.—COMPARISON OF RAILWAY FACILITIES IN DIFFERENT STATES, 1912.

State. ...	Population, 30th June, 1912.	Area.	Per Mile of Line Open.	
			Population.	Area.
	Number.	Sq. miles.	Number.	Sq. miles.
New South Wales*	1,739,391	310,372	457	78.1
Victoria	1,354,405	87,884	372	24.1
Queensland	683,917	670,500	137	145.3
South Australia	420,806	380,070	216	196.0
Western Australia	302,341	975,920	105	339.4
Tasmania	190,017	26,215	287	39.6
Northern Territory	3,362	523,620	23	3,602.7
Commonwealth	4,644,239	2,974,581	260	166.7

* Including Federal Capital Territory.

6. Classification of Lines according to Gauge, 1911-12.—The subjoined tables shew the total mileage, exclusive of sidings and cross-overs, of (i.) Government railways; (ii.) Private railways open to the public for general traffic; and (iii.) Private lines used for special purposes, classified according to gauge. Particulars of Government railways are up to 30th June, 1912, of private railways open for general traffic to the 31st December, 1911, and of private railways open for special purposes to the 31st December, 1910.

**GOVERNMENT AND PRIVATE RAILWAYS.—CLASSIFICATION ACCORDING TO GAUGE,
1911-12.**

State.	Mileage having a Gauge of—					Total.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2 ft. 6 in.	2 ft.	
GOVERNMENT RAILWAYS.						
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales ...	...	3,832	...	...	...	3,832
Victoria ...	3,500	...	...	122	...	3,622
Queensland ...	...	...	4,266	...	...	4,266
South Australia ...	626	...	1,313*	...	...	*1,939
Western Australia ...	...	...	2,598	...	...	2,598
Northern Territory...	...	...	145	...	...	145
Total, Mainland...	4,126	3,832	8,322	122	...	16,402
Tasmania ...	...	...	472	...	24	496
Commonwealth ...	4,126	3,832	8,794	122	24	16,898
PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC.						
New South Wales ...	45	60	36	...	...	141
Victoria ...	14	...	...	...	...	14
Queensland ...	...	...	239	...	107	346
South Australia ...	...	...	...	...	...	...
Western Australia ...	...	...	277	...	...	277
Tasmania ...	...	...	156	...	10	166
Commonwealth ...	59	60	708	...	117	944
PRIVATE RAILWAYS OPEN FOR SPECIAL PURPOSES.†						
New South Wales ...	...	121	4	...	...	125
Victoria ...	37	...	...	...	...	37
Queensland ...	...	...	17	...	4	21
South Australia ...	...	...	58	...	...	58
Western Australia ...	...	...	498‡	...	62§	555
Tasmania ...	...	...	25	...	14	39
Commonwealth ...	37	121	597	...	80	835
TOTAL.						
New South Wales ...	45	4,013	40	...	...	4,098
Victoria ...	3,551	...	...	122	...	3,673
Queensland ...	...	...	4,522	...	111	4,633
South Australia ...	626	...	1,371*	...	...	*1,997
Western Australia ...	...	...	3,368‡	...	62	3,430
Tasmania ...	...	...	653	...	48	701
Northern Territory...	...	...	145	...	...	145
Commonwealth ...	4,222	4,013	10,099	122	221	18,677

* Including the mileage (478) of the Port Augusta to Oodnadatta line leased to the South Australian Government by the Commonwealth Government on 1st January, 1911. † Figures are for 1909. ‡ Including 6 miles of 3 ft. 4 in. gauge. § Including 18 miles of 1 ft. 8 in. gauge.

(B) Government Railways.

1. **Mileage Open, 1901 to 1912.**—The following table shews the length of Government railways open for traffic on the 30th June in the years 1901-2 and 1908-12:—

**GOVERNMENT RAILWAYS.—MILEAGE OPEN FOR TRAFFIC FOR 1901-2
and 1908-12.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1901-2 ...	3,026	3,302	2,801	1,736	1,360	*462	145	12,832
1907-8 ...	3,472	3,396	3,359	1,879	1,943	463	145	14,657
1908-9 ...	3,623	3,410	3,498	1,888	2,044	463	145	15,071
1909-10 ...	3,643	3,490	3,660	1,912	2,144	469	145	15,463
1910-11 ...	3,760	3,523	3,867	†1,935	2,375	470	145	16,075
1911-12 ...	3,832	3,622	4,266	1,939	2,598	496	145	16,898

* To the 31st December. † Including the mileage (478) of the Port Augusta to Oodnadatta line leased to the South Australian Government by the Commonwealth Government on 1st January, 1911.

The following statement shews the actual mileage opened for traffic in the year 1911-12, and also the annual average increase in mileage opened since 1903 in each State:—

GOVERNMENT RAILWAYS.—MILEAGE OPENED ANNUALLY.

State	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	C'with
Mileage opened during 1911-12	74½	99	218	4	222½	24	...	642
Average annual mileage increase (1903 to 1912)	77	26½	173	22½	120	3½	...	423

NOTE.—Owing apparently to remeasurements of lines in New South Wales and Western Australia, the mileages given in this table do not agree with those open for traffic given in the previous table.

(i.) *New South Wales.* During the year ended 30th June, 1912, the following lines were opened for traffic:—Flemington to Homebush Bay, Abattoirs Branch Line (3½ miles); West Maitland to Dungog (32½ miles); Mucra to Urana (14½ miles); Cooma to Nimmitabel (24½ miles); a total of 74½ miles.

(ii.) *Victoria.* The following lines were opened for traffic during 1911-12:—Cressy to Newtown (24½ miles); Ouyen to Kow Plains (56½ miles); Kow Plains to Murrayville (11½ miles); and Eltham to Hurst's Bridge (6½ miles); a total of 99 miles.

(iii.) *Queensland.* The increase of 218 miles in the mileage opened for traffic in 1911-12 was due to the opening of the following lines:—Herberton to Tumoulin (17 miles); Finch Hatton to Eungella Range (7 miles); Dalby to Kumbarilla (26 miles); Warwick to Maryville (19 miles); Tallwood to Thallon (38 miles); Kumbarilla to Tara

(26 miles); Pittsworth to Milmerran (27 miles); Kingaroy to Nanango (15 miles); Kirkup to Kungurri (1 mile); Rosewood to Marburg (9 miles); Oakey to 17 Miles (17 miles); and Bajool to Port Alma (16 miles). In addition, the line from Cairns to Babinda (37 miles) was purchased on 1st July, 1911, by the Government from the Mulgrave Shire Council.

(iv.) *South Australia.* The only lines opened for traffic in this State during the year 1911-12 were those from Nuriootpa to Angaston, a distance of $3\frac{1}{2}$ miles, and from Torrens Bridge to Mile End (half-a-mile).

By the transfer to the Commonwealth Government of the line from Port Augusta to Oodnadatta, the railways of the State have undergone a reduction to the extent of 478 miles. This line has, however, been leased to the State by the Commonwealth Government as from the 1st January, 1911, and is therefore included in the mileage belonging to this State.

(v.) *Western Australia.* The following new sections of railway were taken over from the Public Works Department during the year 1911-12 and opened for public traffic:—Goomalling to Wongan Hills ($33\frac{1}{2}$ miles); Kununoppin to Merredin ($37\frac{1}{2}$ miles); Southern Cross to Bullfinch (22 miles); Katanning to Nampup (38 miles); Boyup to Kojonup (51 miles); Dumbleyung Extension (24 miles); Naraling to Yuna ($11\frac{1}{2}$ miles); and No. 2 Railway Mill Branch, (5 miles); a total of $222\frac{1}{2}$ miles.

(vi.) *Tasmania.* During the year 1911-12 a line from Scottsdale to Branxholm (24 miles) was opened for traffic.

2. Non-conformity of Gauge.—With but few exceptions, all the railway lines in the Commonwealth open for general traffic are now owned and managed by the respective States in whose territory they run, but, unfortunately for the purpose of interstate traffic, the construction of the various systems in different parts of Australia has proceeded without uniformity of gauge. In 1846 Mr. Gladstone, then Colonial Secretary, recommended in a despatch to the Governor of New South Wales that the 4 ft. 8½ in. gauge should be adopted. In 1850, however, the engineer to the Sydney Railroad and Tramway Company strongly advocated the adoption of the 5 ft. 3 in. gauge, and in 1852 an Act was passed making it compulsory that all railways in New South Wales should be constructed to the wider gauge, the Governors of Victoria and South Australia being duly advised of the step that had been taken. In 1852, however, the company mentioned, having changed its engineer, also changed its views as to the gauge question, and in the following year succeeded in obtaining the repeal of the Act of 1852 and in passing another, under the provisions of which the narrower gauge was made imperative. This step was taken without the concurrence of the other States concerned, and a considerable amount of ill-feeling arose, especially in Victoria, where two private companies had already placed large orders for rolling stock constructed to the broad gauge originally chosen. The result was that it was decided in Victoria to adhere to the 5 ft. 3 in. gauge as the standard gauge for that State, while the Sydney Railroad and Tramway Company proceeded with the construction of its lines to the 4 ft. 8½ in. gauge, and these two gauges have since been adhered to as the standard gauges of the respective States. The Queensland Government had at the outset adopted a gauge of 3 ft. 6 in. as being best suited to the requirements of the colony, and has since adhered to that gauge throughout the State, so that all goods have to be discharged and reloaded at the boundary between that State and New South Wales. In South Australia the broad gauge of Victoria was at first adopted, and the part of the interstate line between Adelaide and the Victorian boundary was constructed to that gauge, so that the line from Melbourne to Adelaide is uniform. In the lines which have been constructed more recently, however, and in

the Northern Territory, the South Australian Government has, with a view to economy in construction, adopted a gauge of 3 ft. 6 in. In Western Australia and Tasmania the 3 ft. 6 in. gauge was also adopted. It was recognised in both these States that the construction of railways was essential to their proper development, but as their financial resources would not bear a heavy initial expenditure in connection with the establishment of railway lines, it was decided to adopt the narrow gauge. In Victoria, light railways have been constructed in recent years to a gauge of 2 ft. 6 in., whilst in Tasmania short lengths have been laid down to a 2 ft. gauge.

3. Interstate Communication.—Until the railway systems of the eastern States were connected at the common boundaries the inconvenience of non-conformity of gauge was not felt. Since then, however, the necessary transshipments of both passengers and goods have been a source of trouble, delay, and expense. On the 14th June, 1883, a railway bridge over the River Murray at Wodonga was opened for traffic, and communication was then established between Melbourne and Sydney. On the 19th January, 1887, the last section of the Victorian line to Serviceton, on the South Australian border, was completed, and a junction was thus effected with the South Australian line to Adelaide. On the 16th January, 1888, a junction was effected between the New South Wales and Queensland lines at Wallangarra, but there was still a break in the line from Sydney at the Hawkesbury River, thirty-six miles from Sydney. This last link was, however, completed on the 1st May, 1889, by the opening of the Hawkesbury River bridge, 2900 feet in length, and railway communication was thus established between the four capital cities, Brisbane, Sydney, Melbourne, and Adelaide.

In February, 1911, a conference of officers of the Commonwealth and State Governments was held in Melbourne under the presidency of the Minister for Defence to consider matters of defence as affected by the facilities for transport of troops and armaments in the event of war. The proposal laid before the conference was that a railway central staff should be formed, so that in case of war the Defence Department would have at hand not only a well considered scheme of mobilisation, but also an organised staff of men ready to carry out the work of transport. In § 7 of the section on Defence will be found the result of this conference.

4. Unification of Gauge.—The development of the railway systems of the Commonwealth has shewn that the adoption of different gauges on the main lines in the several States was a serious error. The extra cost, delay, and inconvenience incurred by the necessity of transferring through-passengers and goods at places where there are breaks of gauge, though not at present of any appreciable magnitude, are becoming more serious as the volume of business increases. As an indication of the extra cost thus involved the following junction charges payable on interstate traffic between New South Wales and Victoria and *vice-versa* are given :—

JUNCTION CHARGES.—NEW SOUTH WALES AND VICTORIA, 1912.

General Merchandise. 1st to 3rd Classes.	Vehicles for which rate per mile operates.	Live Stock.	Empty Returns.	Other Goods.*
2s. 6d. per ton	1s. 6d. each	3s. per truck.	1s. per ton.	1s. 6d. per ton.

* No junction charge is made on wool.

Although the cost of alteration to a uniform gauge would be great, many propositions have from time to time been put forward with the object of securing such a gauge, and attention has been drawn to the importance of the unification of gauges before further expenditure on railway construction is incurred by the States. The problem is, however, one which is by no means easy of solution, and the difficulties are increased by the introduction of what may be called questions of local or State policy. That its solution would facilitate the development of commerce and the settlement on the land throughout the Commonwealth, is now widely recognised. The economic disadvantages of breaks of gauge, and of any artificial restrictions in regard to trade finding its proper geographical outlets, are also seen by dispassionate observers. It is obvious, too, that in the event of a foreign invasion of any part of the seaboard, the interchange and concentrations of rolling stock for the transport of men and war material would be impeded, and might result in confusion and loss. It is asserted, moreover, that unification of gauges would tend to reduce to a negligible quantity all tendency to disorganisation and undue congestion likely to occur at times of bountiful seasons; that various trades and industries would be benefited by the aggregation, at times of abnormal or periodic activity, of idle trucks from other States; that there would be a large saving in the total capital expenditure on rolling stock; in other words, that the fullest use of all rolling stock and the meeting of all exigencies would be facilitated.

As regards the unification of gauges, the question naturally arises as to which gauge should be adopted as the universal gauge of the Commonwealth. As regards Government railways only, the New South Wales gauge has a mileage of 3832; Victoria and South Australia have a combined mileage of 4126 of 5 ft. 3 in. gauge; while Queensland, South Australia, Western Australia, and the Northern Territory have together 8322 miles of 3 ft. 6 in. gauge. By far the greater part of the mileage of private railways open for general traffic has also been constructed to the 3 ft. 6 in. gauge. The mere question of preponderance of mileage, therefore, indicates the 3 ft. 6 in. gauge for adoption. But this question is obviously subordinate to those involving engineering and economic considerations. Thus, the relative efficiency from the widest point of view, the relative costs of alterations of permanent way and rolling stock, of carrying capacity and speed, that is to say, questions of a technical nature about which figures are not available, enter into the grounds for decision. As regards the unification of the New South Wales and Victorian lines, the advantage of reducing the broad gauge to the 4 ft. 8½ in. gauge is that there would be no necessity for the alteration of tunnels, cuttings, bridges, or viaducts.

In 1897 a conference was held between the Railway Commissioners of New South Wales, Victoria, and South Australia to consider and report upon the unification of the railway gauges of these States. In their report the Commissioners specified the mileage (including double roads, sidings, and private coal lines) of 4 ft. 8½ in. and 5 ft. 3 in. gauges in the several States to be as follows:—

**UNIFICATION OF 4 ft. 8½ in. AND 5 ft. 3 in. GAUGES IN NEW SOUTH WALES,
VICTORIA, AND SOUTH AUSTRALIA, MILEAGE OPEN, 1897.**

Particulars.	New South Wales.		Victoria.	South Aust.	Total.	
Gauge ...	4 ft. 8½ in.	5 ft. 3 in.	5 ft. 3 in.	5 ft. 3 in.	4 ft. 8½ in.	5 ft. 3 in.
Mileage ...	3,340	51	3,868	590	3,340	4,509

The cost of unification of the gauges as estimated by the Commissioners at the conference was as follows:—

**COST OF UNIFICATION OF 4 ft. 8½ in. and 5 ft. 3 in. GAUGES, NEW SOUTH WALES,
VICTORIA, AND SOUTH AUSTRALIA, 1897.**

Particulars.	Alteration of Per- manent Way and Works.	Alteration of Rolling Stock.	Temporary Workshops and Material.	Total.
	£	£	£	£
<i>New South Wales</i> , conversion from 4 ft. 8½ in. to 5 ft. 3 in.	2,518,000	1,702,000	40,000	4,260,000
<i>Victoria, South Australia, and New South Wales</i> (51 miles) conversion from 5 ft. 3 in. to 4 ft. 8½ in.	493,000	1,827,500	40,000	2,360,500

It may be seen that the difference in estimated cost in favour of change from the 5 ft. 3 in. gauge to 4 ft. 8½ in. gauge was £1,899,500. The Commissioners agreed that the work could be carried out within five years from the date of its commencement.

A conference of railway engineers representing the six States and the Federal Government was held in November, 1912, when the question of unification of gauge was again discussed. The necessity for such a step was emphasised, and a conclusion was come to that the relative advantages of the 5 ft. 3 in. and 4 ft. 8½ in. gauges, from the point of view of efficiency and economy of working, were approximately equal, and that the determination of the most suitable gauge should be made on the basis of cost. The recommendations contained in the final report of the Conference will be found in the Appendix.

Military officers have asserted that from a defence point of view it is imperative that the present mixture of gauges should be abolished. Reference has already been made (see paragraph 3 hereof) to the Railway War Conference, which was called more particularly to deal with the break of gauge problem as it would affect the transport of troops and armaments.

The question whether a broader gauge would be advantageous for the American railways was discussed in an editorial of the "Engineering News" of New York, 7th December, 1911, it there being stated "that the railway experience of the United States would not justify Australia in adopting a broader gauge for its railway system than that in use here, viz., 4 ft. 8½ in."

It also pointed out in the editorial referred to that while "it is, of course, true that our (American) large cars and locomotives are an important factor in reducing the cost of long haul freight traffic, it does not follow that the much larger cars and locomotives which would be easily possible with a wider gauge would effect an economic saving taking the country as a whole."

The entire article supports the view that a 4 ft. 8½ in. gauge is from all points the most desirable.

5. Average Mileage Worked, Train Miles Run, Number of Passenger Journeys, and Tonnage of Goods and Live Stock Carried, on Government Railways. — The table at head of page 685 gives the actual mileage open for traffic at the end of each financial year, but, in considering the returns relating to revenue and expenditure, and other matters, it is desirable to know the average number of miles actually worked during each year. The next table shows the average number of miles worked, the total number of train miles run, the number of passenger journeys, and the tonnage of goods and live stock carried by the Government railways of each State during the years 1901-2 and 1907-12 inclusive:—

**GOVERNMENT RAILWAYS.—AVERAGE MILEAGE WORKED, TRAIN MILES RUN
NUMBER OF PASSENGER JOURNEYS, AND TONNAGE OF GOODS AND LIVE
STOCK CARRIED, 1901 and 1907-12.**

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aust.	Tasmania.	N. Ter.	C'wealth
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AVERAGE MILEAGE WORKED.

1901-2	2,953	3,265	2,801	1,736	1,356	468*	145	12,794
1907-8	3,469	3,396	3,239	1,860	1,830	470	145	14,409
1908-9	3,550	3,397	3,444	1,881	1,971	470	145	14,868
1909-10	3,625	3,441	3,533	1,893	2,102	474	145	15,213
1910-11	3,713	3,505	3,795	1,915	2,286	478	145	15,837
1911-12	3,799	3,543	4,144	1,938	2,471	503	145	16,543

TRAIN MILES RUN (,000 OMITTED).

1901-2	11,649	11,285	5,666	4,196	4,508	903*	30	38,237
1907-8	14,251	10,383	6,558	5,010	3,964	1,028	31	41,325
1908-9	15,074	11,291	7,391	4,925	4,102	1,029	31	43,843
1909-10	15,468	11,706	8,157	5,421	4,399	1,060	30	46,240
1910-11	17,007	12,973	9,367	5,946	4,963	1,041	30	51,327
1911-12	18,521	13,836	10,327	6,244	5,227	1,047	30	55,232

NUMBER OF PASSENGER JOURNEYS (,000 OMITTED).

1901-2	30,885	57,465	†8,421	9,643	8,153	762*	4	115,338
1907-8	47,487	74,907	10,420	12,839	12,946	1,439	3	160,041
1908-9	52,052	81,021	11,522	13,853	12,717	1,547	3	172,715
1909-10	53,644	85,280	13,259	15,282	13,171	1,351	3	182,390
1910-11	60,920	93,796	14,791	16,620	14,628	1,692	2	202,639
1911-12	70,707	104,235	17,081	18,353	16,390	1,715	2	228,483

TONNAGE OF GOODS AND LIVE STOCK CARRIED (,000 OMITTED).

1901-2	6,468	3,434	1,882	1,392	1,888	1407*	2	\$15,478
1907-8	10,175	3,755	2,531	2,256	2,059	480	4	21,260
1908-9	9,299	4,167	2,662	2,166	1,997	483	3	20,777
1909-10	8,393	4,468	2,831	2,481	2,242	439	2	20,856
1910-11	10,355	4,968	3,295	2,731	2,489	364	2	24,204
1911-12	10,910	5,298	3,494	2,782	2,542	470	2	25,498

* For the calendar year 1902. The average mileage worked is larger than the actual mileage open, owing to the fact that the Government Railways have running powers over certain private lines.

† These figures are partly estimated, the actual returns excluding journeys by season ticket holders. ‡ Exclusive of live stock. § Exclusive of live stock returns for Tasmania. ¶ Exclusive of Port Augusta-Oodnadatta line for six months ended 30th June, 1911. ¶ Exclusive of Port Augusta-Oodnadatta line.

6. Length and Gauge of Railway Systems in each State.—A map shewing the State railway lines, and also some private lines open to the public for general traffic, in the different States of the Commonwealth is given on page 715 hereafter. In all the States the Government railways are grouped, for the convenience of administration and management, into several divisions of systems, some of which have already been briefly referred to above in dealing with the history of construction of the railways. The subjoined summary shews concisely the gauge and length of the main and branch lines included in each division or system of the different States of the Commonwealth for the year ended the 30th June, 1912:—

GOVERNMENT RAILWAYS, 1911-12.

Particulars.	Length.	Gauge.
	Miles.	ft. in.
1. NEW SOUTH WALES.		
(i.) The Northern line and branches—		
(a) Main line. Strathfield-Wallangarra	486½	4 8½
(b) Branch lines	475	4 8½
(ii.) The North Coast line and branches—		
(a) Main line. West Maitland-Murwillumbah	183½	4 8½
(b) Branch lines	18	4 8½
(iii.) The Western line and branches—		
(a) Main line. Granville-Bourke	495	4 8½
(b) Branch lines	781	4 8½
(iv.) The Southern line—		
(a) Main line. Granville-Wodonga	381	4 8½
(b) Branch lines	827½	4 8½
(v.) The South-coast (Illawarra) line—		
(a) Main line. Sydney to Nowra	93	4 8½
(b) Branch lines	7	4 8½
(vi.) Suburban lines	45½	4 8½
(vii.) Broken Hill line. Broken Hill-Tarrawingee	40	3 6
Total	3,832	...
2. VICTORIA.		
(i.) The South-eastern system—		
(a) Main lines. Dandenong-Port Albert, Aspendale-Stony Point	145	5 3
(b) Branch lines	43½	5 3
(ii.) The Eastern system—		
(a) Main lines. Dandenong-Bairnsdale, Bayswater-Gembrook, Croydon-Healesville	18 202	2 6 5 3
(b) Branch lines	97 29	5 3 2 6
(iii.) The North-eastern system—		
(a) Main line. Craigieburn-Wodonga	171	5 3
(b) Branch lines	30 446½	2 6 5 3
(iv.) The Northern system—		
(a) Main line. Digger's Rest-Echuca	135	5 3
(b) Branch lines	1,021	5 3
(v.) The North-western system—		
(a) Main line. Rockbank-Serviceton	266	5 3
(b) Branch lines	234½	5 3
(vi.) The Western and South-western system—		
(a) Main line. Werribee-Portland	272	5 3
(b) Branch lines	44½ 273½	2 6 5 3
(vii.) The Suburban system—		
Including the lines to Aspendale, Dandenong, Bayswater, Croydon, Hurst's Bridge, Craigieburn, Digger's Rest, Rockbank, and Werribee	194½	5 3
Total	3,622½	...

Particulars.			Length.	Gauge.
			Miles.	ft. in.
3. QUEENSLAND.				
(i.) The Southern division—				
(a)	The Southern line.	Ipswich-Wallangarra ...	221	3 6
(b)	The Western line.	Gowrie Junction-Chinnamulla ...	496	3 6
(c)	The South-western line.	Warwick-Talwood ...	217	3 6
(d)	The Nth.-coast line.	Northgate Junction-235 mls. 14chs.	234	3 6
(e)	The South-coast line.	Sunnybank-Tweed Heads ...	62	3 6
(f)	Suburban lines	... ..	73	3 6
(g)	Branch lines	... ..	711	3 6
(ii.) The Central division—				
(a)	The Coast line.	235 miles 14 chains-Rockhampton ...	161	3 6
(b)	The Central line.	Archer Park-Longreach ...	429	3 6
(c)	Branch lines	... ..	333	3 6
(iii.) The Northern division—				
(a)	Mackay line	... ..	63	3 6
(b)	Bowen line	... ..	48	3 6
(c)	The Great Nthn. Rlwy.	Townsville-Selwyn branches	754	3 6
(d)	Cairns line	... ..	300	3 6
(e)	Cooktown line	... ..	68	3 6
(f)	Normanton line	... ..	96	3 6
Total			4,266	...
4. SOUTH AUSTRALIA.				
(i.) The Midland system—				
(a)	Main line.	Adelaide-Terowie ...	140	5 3
(b)	Branch lines	... ..	128	5 3
(ii.) The Northern system—				
(a)	Terowie-Quorn	... ..	94½	3 6
(b)	Other lines	... ..	455	3 6
			5	5 3
(iii.) The Southern system—				
(a)	Main line.	Adelaide to Serviceton ...	194½	5 3
(b)	Branch lines	... ..	158½	5 3
(iv.) The South-eastern system—				
(a)	Wolsley-Mount Gambier	... ..	112	3 6
(b)	Branch lines	... ..	113	3 6
(v.)	Port Broughton line	... ..	10	3 6
(vi.) The Western system—				
	Port Lincoln-Yeelanna	... ..	50½	3 6
Total			1,461½	...
5. WESTERN AUSTRALIA.				
(i.) Eastern railway—				
(a)	Main line.	Fremantle-Beverley ...	111	3 6
(b)	Branch lines	... ..	127	3 6
(ii.) Eastern Goldfields railway—				
(a)	Main line.	Northam-Laverton ...	520	3 6
(b)	Branch lines	... ..	346½	3 6
(iii.) South-western railway—				
(a)	Main line.	Perth-Bunbury ...	115	3 6
(b)	Branch lines	... ..	368½	3 6
(iv.) Great Southern railway—				
(a)	Beverley-Albany Jetty	... ..	243	3 6
(b)	Branch lines	... ..	223½	3 6
(v.) Northern railway—				
(a)	Main line.	Geraldton-Meekatharra ...	333½	3 6
(b)	Branch lines	... ..	175½	3 6
(vi.)	Hopetoun-Ravensthorpe railway	... ..	34	3 6
Total			2,597½	...

Particulars.		Length.	Gauge.
6 TASMANIA.		Miles.	ft. in.
(i.)	Main line. Hobart-Evandale Junction	124 $\frac{1}{4}$	3 6
(ii.)	Derwent Valley line. Bridgewater-Glenora	30 $\frac{1}{2}$	3 6
(iii.)	Apsley line. Brighton Junction-Apsley	26	3 6
(iv.)	Parattah-Oatlands line	4 $\frac{1}{2}$	3 6
(v.)	Fingal line. St. Mary's-Conara	46 $\frac{3}{4}$	3 6
(vi.)	Western line. Launceston-Burnie	111 $\frac{1}{2}$	3 6
(vii.)	Chudleigh line	12 $\frac{3}{4}$	3 6
(viii.)	North-eastern line. Launceston-Scottsdale	71 $\frac{1}{2}$	3 6
(ix.)	Sorell-Bellerive line	14 $\frac{1}{2}$	3 6
(x.)	Zeehan line. Regatta Point-Zeehan	29 $\frac{3}{4}$	3 6
(xi.)	North-east Dundas tramway. Zeehan-Williamsford	20 $\frac{1}{2}$	2 0
(xii.)	Comstock tramway	4 $\frac{1}{4}$	2 0
Total		495 $\frac{3}{4}$	...
7. FEDERAL RAILWAYS.			
(i.)	Northern Territory—		
	Darwin to Pine Creek	145 $\frac{1}{2}$	3 6
(ii.)	South Australia—		
	Port Augusta to Oodnadatta	477 $\frac{3}{4}$	3 6
Total		623 $\frac{1}{4}$	...
Grand total of Government railways in the Commonwealth		16,898 $\frac{1}{2}$	...

7. Administration and Control of Government Railways.—In each State of the Commonwealth the policy has now been established that the railways should be kept under the control of the Government. This policy, as has been shewn, was early actualised in Australia, and, excepting in cases presenting unusual circumstances, may be regarded as the settled policy of the country. It may here be observed that for many years past nationalisation of railways throughout Europe has been a feature of the development of railway policy, and so far there is no sign of any movement in an opposite direction. Indeed it may be said that the Governments have recognised the supreme importance of a railroad policy, not only as an element in the industrial, but even in the political life of nations, and have felt that nothing short of complete ownership and direct management of the railroads would give them the power which, for national reasons, they must exert. In America the modern tendency is to so condition the freights by Governmental action as to give at least a quasi-national character to the railways.

(i.) *New South Wales.* Prior to the year 1888 the control of the State railways in New South Wales was vested in the Minister for Works, under the provisions of the Railways Act of 1858, the actual management being in the hands of a Commissioner. In 1888, however, the Act referred to was repealed by a new Act, the object of which was to improve the administration and to free it from political influences. Under this Act, as amended in 1901, three Commissioners were appointed for a period of seven years, but in 1906 an amending Act was passed, which provides for the appointment of a Chief Commissioner, with supreme power, an Assistant Commissioner for Railways, and an Assistant Commissioner for Tramways. The Chief Commissioner is required to present an annual report to Parliament, through the Minister for Railways, setting forth an account of his proceedings, and of the revenue and expenditure during the previous year. New lines are constructed by the Railway and Tramway Construction Branch of the Public Works Department, and on completion are handed over to the control of the Chief Commissioner.

(ii.) *Victoria.* In consequence of general dissatisfaction in regard to the management of the railways by political heads, a new Railway Act was passed and came into force on the 1st November, 1883. Under its provisions the management and control

of the State railways were placed in the hands of three Commissioners, who supervised the construction of new lines as well as the general management of lines already open for traffic. On the 1st January, 1892, the duty of the construction of new lines was transferred to the Board of Land and Works, and the Minister, under the provisions of the Railways Act of 1891, was given greater powers to interfere in matters of policy. In 1895 the Government appointed a Board to inquire into and report upon the general working of the Railway Department, and as a result of their report the Railways Act of 1896 was passed. The management was placed in the hands of one Commissioner until the year 1903, when the Victorian Railway Commissioners Act was passed, and the administration was again placed in the hands of three Commissioners.

Proposals for the construction of new lines are in every case, in which the estimated cost is in excess of £20,000, investigated by the Parliamentary Standing Committee on Railways, whose recommendation is submitted to the Legislature. Any new line authorised by Parliament is constructed under the supervision of the Chief Engineer for Railway Construction, who is responsible to the Minister of Railways for the time being, and is not subject to the control of the Commissioners. New lines are constructed under the authority of the Railway Lands Acquisition Acts 1893 to 1899.

(iii.) *Queensland.* The first Act referring to the construction of railways, passed by the Queensland Legislature in 1863, provided for the appointment of a Commissioner of Railways, who was to be the permanent head of the Railway Department, but was, however, also to be subordinate, as regards all matters of administration, to the Minister in charge of the railways for the time being. This arrangement was continued until the year 1888, when an Act was passed providing for the appointment of three Commissioners invested with full powers as to the administration, management, and construction of the railways, the control of which was thus removed from political influence. The functions of a Minister for Railways were not abolished, but they were so defined and limited that the Minister became in effect an intermediary between the Commissioners and Parliament, to which body the Commissioners were bound to make an annual report, setting forth an account of their proceedings, and a financial statement for the previous year. The Railways Act Amendment Act of 1896 again provided for the appointment of one Commissioner only, for a term not exceeding three years, extended in 1902 to a maximum term of seven years. Under the Act of 1896 the Commissioner is required to prepare an annual report of the Railway Department. New lines are constructed by the Commissioner under the Railways Act of 1906. Under this Act the ratepayers in any district in which a new line is constructed are liable for the amount of any deficiency in case the earnings in any year are less than the working expenses, together with interest at the rate of 3 per cent. on the cost of construction. The separation of each other by long distances of some of the railway lines in Queensland puts difficulties in the way of their economical administration and supervision, since it is found necessary to maintain, in connection with each of the principal detached lines, a separate staff of engineering and managing officials.

(iv.) *South Australia.* The Railway Clauses Consolidation Act, passed in South Australia in March, 1847, was the first Act passed in Australia referring to the construction of railways; its provisions, however, contained many obsolete clauses of English railway legislation, and were soon modified. In 1887 an Act to make better provision for the construction, maintenance, and management of railways was passed, and came into force on the 1st June, 1888; it removed the control of the railways from political influence and provided for the appointment of three Commissioners, into whose hands the management and the supervision of the railways passed. The Act of 1887 was, however, amended by the Railway Commissioners Act of 1894, which provides for one Commissioner only, assisted by a Board of Advice. Under the Act of 1894 the Commissioner has the same powers as were vested in the three Commissioners under the Act of 1887. Further amendments were made in the years 1902 and 1906, but since the Act of 1894 was passed the management, maintenance, and construction of the railways have remained in the

hands of one Commissioner, who is required to present to Parliament an annual report of his proceedings, and of the revenue and expenditure during the previous year.

(v.) *Western Australia.* From the time of the inception of railways in this State until the granting of responsible government in 1890, the construction, maintenance, and control of all railways were in the hands of an official holding the title of Commissioner of Railways, and having a seat in the Executive Council. This official was invested with very extensive powers for all purposes connected with railways, and had also to supervise the safe working and the charges made by private railway owners. On the institution of responsible government the office of Commissioner was converted into a Ministerial one; the active management was placed in the hands of an officer styled General Manager of Railways, while construction works on new lines were carried out by the Department of Public Works. In 1902 a Bill was introduced into Parliament providing for the appointment for a term of five years of a Railway Commissioner to be free from political influence. This Bill received the Vice-regal assent on the 20th December, 1902. The former Railway Acts, of which the Act in question was an amendment, continued to remain in force, with the result that certain anomalies and ambiguities arose, in consequence of which a Consolidating Government Railways Act was passed in 1904. Under its provisions the administration of all Government railways was placed in the hands of the Commissioner, who was relieved from the supervision of private railways. The construction of new railways or of extensions is left, as formerly, in the hands of the Minister controlling the Department of Public Works. The Act of 1904 was amended in certain details in 1907.

(vi.) *Tasmania.* The law relating to the control and management of the Tasmanian Government railways was amended and consolidated by the Railway Management Act of 1891, which has in turn been amended by Acts passed in 1893, 1896, 1901, and 1910. Under the last Amending Act a Railway Commissioner has been appointed for four years, in whose hands are placed the control, management, and maintenance of every Government railway.

(vii.) *Northern Territory.* On the 1st January, 1911, the railway from Darwin to Pine Creek passed from the control of South Australia with the transfer of this territory to the Commonwealth Government.

8. Lines under Construction, and Authorised and Proposed Lines, 1912.—The following statement gives particulars up to the 30th June, 1912, of the mileage of Government railways (a) under construction, and (b) authorised for construction but not commenced:—

MILEAGE UNDER CONSTRUCTION AND AUTHORISED, 30th JUNE, 1912.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Mileage under construction	671½	196½	1,596	288	409½	...	3,161
Mileage authorised	221½	58½	617	43	355	20	1,309½

(i.) *Lines under Construction.* In spite of the great extension of State railways which has taken place since the year 1875 throughout the Commonwealth, there are still, in some of the States, tracts of country of immense area, which are as yet practically undeveloped, and in which little in the nature of permanent settlement has been accomplished; the general policy in the States is to extend the existing lines inland, in the form of light railways, as settlement increases, and although it is true that lines which were not likely to be commercially successful in the immediate future have been constructed from time to time, for the purpose of encouraging settlement, the general principle that the railways should be self-supporting is kept in view. (a) *In New South Wales* the lines under construction are chiefly of the "pioneer" class, and are made with a view to affording railway communication over level country to districts in which the traffic would not warrant the expenditure necessary to provide thoroughly equipped lines.

As the traffic increases the permanent way is strengthened in order to allow the heavy types of engines to run over it. It is probable that railway extension in New South Wales, in the near future, will be mainly confined to lines of the "pioneer" class. The lines under construction on 30th June, 1912, were those from Dungog to Gloucester (38½ miles), Gloucester to Taree (44 miles), Taree to Wauchope (47½ miles), Macksville to Coff's Harbour (55 miles), and Glenreagh to South Grafton (27½ miles). The construction of 85½ miles of line necessary to connect Wauchope with Glenreagh has been authorised, and this line when completed will form an alternative main route between Newcastle and Brisbane. Other lines under construction are as follows:—Nimmitabel to Bombala (40 miles), Moree to Mungindi (77 miles), Urana to Clear Hills (17 miles), Forbes to Stockinbingal (83½ miles), Wagga to Tumberumba (76½ miles), Parkes to Peake Hill (31 miles), Muswellbrook to Merriwa (51 miles), Dunedoo to Coonabarabran (71 miles), Flemington to Belmore, Wardell Road to Glebe Island, and Darling Island Railway (in all 11½ miles). (b) *Victoria*. In this State the following lines were under construction by the Board of Land and Works on the 30th June, 1912:—5 ft. 3 in. gauge: White Cliffs to Yelta (9¾ miles), Bairnsdale to Orbest (60 miles), Jeparit to Lorquon (14½ miles), Gheringhap to Maroona (100¾ miles), Noradjuha to Toolondo (11½ miles), making in all 196½ miles. (c) *Queensland*. In December, 1910, the North Coast Railway Act was passed. Under this Act a series of lines when constructed will link up a number of existing lines in such a way that a through line will be obtained from Rockhampton to Cairns, *via* Mackay and Townsville, a total distance of 569 miles. By the completion of this line it will be possible to travel from Cairns to the southern border of the State at Wallangarra, a total distance of about 1198 miles. At the same time the Great Western Railway Act was passed. Under this Act provision is made for the extension in a westerly or south-westerly direction of the lines already constructed to Wallal, Blackall, Winton, and Malbon in such a manner that they will form junctions with a line to be made running north-westerly from Tobermory to Camooweal. These extensions, together with the north-westerly line, will make an aggregate distance of 1282 miles to be constructed. With the completion of both these schemes the railways of this State will be brought into direct communication with each other on both their east and west boundaries. On the 30th June, 1912, the following lines were under construction:—Woodford to Kilcoy (17 miles), Seventeen Miles to Cooyar (21 miles), Mount Morgan to the Dawson River (69 miles), Cordalba to Dallarnil (31 miles), Gayndah to Mundubbera (23 miles), Keeson to Imbil (24 miles), Blackbutt to Yarraman (15 miles), First Section to Taroom (44 miles). Of the Great Western Railway the following parts are under construction:—Section A: From Wallal westward (245 miles); Section B: From Blackall south-west (348 miles); Section D: From Malbon, south-west (328 miles). The following parts of the North Coast Railway are under construction:—Section A: From Rockhampton northwards to near St. Lawrence (123 miles); Section B: Portion from Mackay southwards to near St. Lawrence (72 miles); Section C: From Bobawaba northwards to Burdekin River (17 miles); Section D: From Ayr southwards to Burdekin River (5 miles); Section D: From Townsville northwards to near Cardwell (86 miles); Section E: From Babinda southwards to near Cardwell (88 miles); a total distance of 1596 miles. (d) *South Australia*. In this State the lines under construction on the 30th June, 1912, were as follows:—Taillem Bend to Brown's Well (100 miles), Port Adelaide to Glanville (1½ miles) and Port Adelaide Loop Line (1½ miles) all 5 ft. 3 in. gauge; Yeelanna to Minnipa Hill (108 miles) and Cummins to Darke's Peak (78 miles), both 3 ft. 6 in. gauge. (e) In *Western Australia* the following lines were in course of construction by the Public Works Department on the 30th June, 1912:—Port Hedland to Marble Bar (114 miles), Dwellingup to Hotham (27 miles), Wickepin to Merredin (120 miles), Northampton to Ajana (40 miles), Tambellup to Ongerup (60 miles), Quairading to Nunagin (50 miles), Hotham to Crossman (7 miles), and Canning Mills extension (1½ miles). (f) *Tasmania*. At the end of the year 1911-12, there were no new lines in course of construction.

(ii.) *Lines Authorised for Construction*. (a) *New South Wales*. In addition to the North coast railway extension between Wauchope and Glenreagh (85½ miles) the

construction of lines from Tullamore to Tottenham (33 miles), Galong to Burrara (17½ miles), Glenreagh to Dorrig (42 miles), Barellan to Mirool (32 miles), and Finley to Tooomwaal (11½ miles) had been authorised up to 30th June, 1912. (b) In *Victoria* the following lines were authorised, but their construction had not been commenced up to the end of June, 1912:—5 ft. 3 in. gauge: Crowland to Navarre (23 miles), Benalla to Tatong (18½ miles), and Rushworth to Colbinabbin (12 miles). (c) *Queensland*. In addition to the new lines upon which work has been commenced, lines from Kingaroy to Tarong (19 miles), Pialba to Urangan (5 miles), Logan Village to Canungra (21 miles), Munbilla to Mt. Edwards (16 miles), Oakey to Mt. Russell (19 miles), Dalby to Jandowae (28 miles), Roma to Oralla (29 miles), Molanda towards Millaa Millaa (9 miles), Tomoulin to Cedar Creek (5 miles), and Cloncurry to Mt. Cuthbert (1st section) 42 miles), have been approved of by Parliament, which has also authorised the construction of the following parts of the Great Western Railway: Section C, from Winton south-west (361 miles); and on the North Coast Railway, Section B, from Mackay Railway northwards to near Midge Point (50 miles); Section C, from near Midge Point to Proserpine (13 miles). (d) In *South Australia* the construction of lines from Goodwood to Willunga (29½ miles), and from Eudunda to Robertson (13½ miles), on the 5 ft. 3 in. gauge, was authorised during the year 1911-1912. It is proposed to electrify the Adelaide-Glenelg (6½ miles) line at an estimated cost of £115,000, and also in newly settled districts to construct light lines to be run by District Councils. (e) In *Western Australia* six lines having a total length of 352 miles were authorised for construction up to the 30th June, 1912. These lines were—Wongan to Mullewa (190 miles), Brookton to Kunjinn (47 miles), Yilliminning Eastward (71 miles), and Wagin to Darkan (44 miles.) (f) In *Tasmania* the construction of a line, 20 miles long, from Burnie to Flowerdale was authorised by Parliament.

(iii.) *Transcontinental Lines*.—(a) *Port Augusta to Kalgoorlie Line*. The necessary arrangements have now been completed for connecting the railways of the eastern and southern districts of Australia with the Western Australian lines by the construction of a line between Port Augusta, in South Australia, and Kalgoorlie, on the Western Australian goldfields, a distance of 1063 miles. The Transcontinental Railway Bill, passed in 1907 by the Federal Houses of Parliament, provided for the expenditure of a sum of £20,000 for a preliminary survey of the proposed line. This survey was commenced in 1908, and was completed in March, 1909. The route of the preliminary survey may be seen on reference to the map on page 715 hereof; the route *via* Tarcoola was, for several reasons, chosen in preference to that *via* Gawler Range and Fowler's Bay. It is stated in the report of the surveyors that while some part of the country which it is proposed to traverse is impossible for settlement, there is an area of good country, extending to about 9000 square miles, which can be considered favourable for pastoral development. The estimated cost of construction and equipment of the line on the basis of a 4 ft. 8½ in. gauge is £3,988,000. It is claimed that the line would be of immense benefit in the expedition of the European mails to the southern and eastern parts of the continent, and, if occasion should arise, in facilitating the transport of troops. In September, 1911, a Bill was introduced into the Commonwealth Parliament to authorise the construction of the line. The Bill became law in December following, but the construction of the line was not to be commenced until the States of South Australia and Western Australia had granted or agreed to grant such portions of the Crown lands as were necessary for the construction, maintenance, and working of the railway. In South Australia an Act has been passed enabling the Commonwealth to acquire lands for the railway in South Australia not exceeding one-eighth of a mile wide on either side of the line, but no town lands are to be included at any time. In Western Australia an Act has also been passed by which all necessary lands are to be granted to the Commonwealth for railway purposes. A Railway Construction Department has been created to carry out the work, and on the 14th September, 1912, the first sod of the Kalgoorlie-Port Augusta Railway was turned by the Governor-General at Port Augusta. A commencement has also been made at Kalgoorlie, and it is estimated that the line, which is being built from both ends and will have a

gauge of 4 ft. 8½ in., will be completed in three years. (b) *Northern Territory Trans-continental Line.* Prior to the taking over of the Northern Territory by the Commonwealth in 1911, the South Australian Government had on more than one occasion considered the practicability of extending the main Northern line from Adelaide, which at present terminates at Oodnadatta, as far as Pine Creek, the southern terminus of the Northern Territory line from Darwin. In 1892 an Act was passed and tenders were invited for the construction of 1063 miles of 3 ft. 6 in. line on the land grant system, the grant of land offered amounting to nearly 80 million acres, but no tenders were accepted. In the Northern Territory Acceptance Act the construction of a transcontinental line from South Australia is provided for; under that Act the property in the railways from Port Augusta to Oodnadatta and from Darwin to Pine Creek has been transferred to the Commonwealth Government as from the 1st January, 1911. While the former of these lines is being worked under the control of the South Australian Commissioner by agreement between the South Australian and Federal Governments, the latter Government contemplates taking over the control of the line at an early date. In the meantime, the extension of the Darwin-Pine Creek line southward to the Katherine River is being proceeded with, and it has been decided to appoint a Commission, which will visit the Territory and report thereon, with a view to decide by what method the Territory may be most advantageously connected with the railway systems of South Australia and Queensland.

9. Cost of Construction and Equipment of Government Railways.—The total cost of construction and equipment of the State railways of the Commonwealth at the 30th June, 1912, amounted to £160,557,160, or to an average of £9502 per mile open for traffic. Particulars as to the capital expenditure incurred in each State are given in the following table:—

**GOVERNMENT RAILWAYS.—COST OF CONSTRUCTION AND EQUIPMENT TO
THE 30th JUNE, 1912.**

State or Territory.	Length of Line Open.	Total Cost of Construction and Equipment.	Average Cost per Mile Open.	Cost per Head of Population.
	Miles.	£	£	£
New South Wales	3,832	53,514,903	13,967	30.76
Victoria	3,622	45,836,573	12,655	33.84
Queensland	4,266	27,751,227	6,505	43.77
South Australia	1,939	14,927,649	7,698	35.47
Western Australia	2,598	18,233,093	5,094	43.76
Tasmania	496	4,253,013	8,583	22.38
Northern Territory	145	1,040,702	7,177	309.54
 Commonwealth	 16,898	 160,557,160	 9,502	 34.57

It will be seen that the lowest average cost per mile open is in Western Australia, and is only £5094, which is less than one-half of the highest average cost, namely, £13,967 in New South Wales, compared with an average of £9502 for the whole Commonwealth. In Western Australia there have been comparatively few engineering difficulties to contend with, and also the system has been adopted in that State of giving contractors the right to carry traffic during the period of their contracts, with the result that, at all events in all goldfields railway contracts, the cost of construction has been considerably lessened.

(i.) *Reduction of Cost per Mile in Recent Years.* The average cost per mile of the lines constructed lately in the Commonwealth is very much less than the figure given in the above table, in consequence of the construction of light "pioneer" lines, which have already been referred to, and which it was originally considered in New South Wales

could be laid down at a cost of £1750 per mile (exclusive of stations and bridges). It should also be remembered that in the early days of railway construction there were considerable engineering difficulties to overcome, and that labour was scarce and dear. Since 1892 over one thousand four hundred miles of the "pioneer" lines have been opened in New South Wales, the average cost ranging from about £2000 to £7500 per mile, according to the difficulties met in the country traversed. The lowest cost per mile for any line previously constructed had been that of the line from Nyngan to Cobar, the average cost of which, to the end of June, 1912, was £3778. In Victoria also the cost of construction has been greatly reduced in recent years. The total cost to the 30th June, 1912, of the narrow gauge (2 ft. 6 in.) lines, having a length of one hundred and twenty-two miles, was only £319,706, which gives an average cost per mile of only £2546. In the other States also the cost of construction per mile has been reduced by building light railways as cheaply as possible. Fairly substantial permanent way is laid down with reduced ballast, and, as settlement progresses and traffic increases, the road is strengthened, and the stations and siding accommodation enlarged. The subjoined table gives examples of some of the more expensive lines, most of which were built in the early days:—

GOVERNMENT RAILWAYS.—EXAMPLES OF LINES CONSTRUCTED AT LARGE CAPITAL EXPENDITURE PER MILE OPEN.

Line.	Gauge.	Length.				Total Cost.	Average Cost per Mile.	Date of Opening.
		Double Line.	Single Line.	Third Line.	Total.			
	ft. in.	m. ch.	m. ch.	m. ch.	m. ch.	£	£	
NEW SOUTH WALES—								
Penrith to Bathurst ...	4 8½	60 26½	50 64½	...	111 10½	3,485,982	31,368	1876
Sydney to Kiama ...	4 8½	24 11½	48 36½	0 63½	73 31½	2,404,955	33,126	1887
Homebush to Waratah	4 8½	74 23½	21 12	2 22½	97 57½	3,420,247	36,004	1889
VICTORIA—		Miles.	Miles.	Miles.	Miles.			
Melbourne to Bendigo	5 3	100.89*	...	...	100.89	4,874,518	48,315	1862
N. Geelong to Ballarat	5 3	41.45*	11.76	...	53.21	1,915,030	35,990	1862

* Double lines and over.

The next table gives instances of lines which have been constructed in more recent years at a comparatively small cost per mile.

The average cost per mile of the 436.35 miles comprised in the above table was £36,907, whereas the average cost of the 337.39 miles referred to in the next table was £1775.

GOVERNMENT RAILWAYS.—EXAMPLES OF LINES CONSTRUCTED AT SMALL CAPITAL EXPENDITURE PER MILE OPEN.

Line.	Gauge.	Length.	Total Cost.	Average Cost per Mile.	Date of Opening.
	ft. in.	Miles.	£	£	
NEW SOUTH WALES—					
Parkes to Condobolin ...	4 8½	62½	131,410	2,094	1898
Burren Junction to Collarenebri	4 8½	42½	102,353	2,405	1906
VICTORIA—					
Wangaratta to Whitfield	2 6	30½	39,327	1,290	1899
Wycheproof to Sealake	5 3	48	74,817	1,562	1895
Ultima to Chillingollah	5 3	20½	30,092	1,494	1909
QUEENSLAND—					
Dalby to Bell	3 6	29½	32,461	1,381	1906
Stewarts Creek to Ayr...	3 6	43½	86,105	1,968	1911
SOUTH AUSTRALIA—					
Wandilo to Glencoe ...	3 6	9	11,454	1,255	1904
Cummins to Yeelanna	3 6	8½	14,104	1,598	1909
WESTERN AUSTRALIA—					
Southern Cross to Bullfinch	3 6	22	36,821	1,674	1911
Narrogin to Wickepin	3 6	26½	40,142	1,515	1909

The comparisons afforded in the two preceding tables are subject to certain limitations, inasmuch as the figures in each case represent the total cost to date, and the cost is naturally greater in the case of the older lines. Further, the figures given represent the cost of construction only (i.e., are exclusive of cost of equipment), and cannot therefore be directly compared with the average cost per mile open given in the preceding table.

(ii.) *Adoption of Special Means of Locomotion.* The Railway Commissioners of Victoria have obtained from America two "M'Keen" motor cars, with the view of testing their suitability for light passenger traffic on country lines. So far they have given satisfactory service, but it is yet too early to express a definite opinion as to their economic value. In South Australia the Railway Commissioner has given orders for two internal combustion engines for the haulage of traffic on light lines. It is hoped these engines will prove effective on lines ill-supplied with water for locomotive purposes, and their operations will be noted with special interest.

(iii.) *Capital Cost of Construction and Equipment, Total and per Mile Open.* The increase in the total capital cost of construction and equipment of Government railways in each State and in the Commonwealth for 1901-2 and for each year from 1908 to 1912 is shewn in the following table:—

**GOVERNMENT RAILWAYS.—CAPITAL COST OF CONSTRUCTION AND EQUIPMENT,
1901-2 and 1907-12.**

TOTAL COST (£,000 OMITTED).

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aust.	Tas.	N. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
1901-2	40,565	40,614	20,119	12,895	7,410	3,841 ¹	1,033	126,530
1907-8	45,683	41,929	22,576	13,379	10,733	3,978	1,037	139,314
1908-9	47,613	42,486	23,395	13,625	11,017	4,004	1,041	143,151
1909-10	48,925	43,142	24,336	13,863	11,377	4,049	1,041	146,733
1910-11	50,972	44,122	25,899	14,375	12,020	4,080	1,041	152,508
1911-12	53,515	45,836	27,751	14,928	13,233	4,253	1,041	160,557

COST PER MILE OPEN.

	£	£	£	£	£	£	£	£
1901-2	13,405	12,300	7,183	7,423	5,449	8,313 ¹	7,124	9,860
1907-8	13,158	12,346	6,721	7,120	5,524	8,591	7,149	9,505
1908-9	13,142	12,459	6,688	7,217	5,387	8,648	7,177	9,500
1909-10	13,440	12,358	6,647	7,250	5,304	8,632	7,177	9,487
1910-11	13,555	12,522	6,696	7,429	5,060	8,676	7,177	9,486
1911-12	13,967	12,655	6,505	7,698	5,094	8,583	7,177	9,502

1. To the 31st December, 1902.

(iv.) *Loan Expenditure on Railways and Tramways.* The subjoined table shews the total loan expenditure on Government railways and tramways (including lines both open and unopen) in each State during the financial years 1901 and 1907, and on railways only for the years 1908-9 to 1911-12. Figures shewing loan expenditures on railways only are not available for years prior to 1909.

**GOVERNMENT RAILWAYS AND TRAMWAYS.—LOAN EXPENDITURE,
1901-2 and 1907-12.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£,000.	£,000.	£,000.	£,000.	£,000.	£,000.	£,000.
1901-2	2,244	483	751	122	579	81*	4,260
1907-8	1,363	250	885	55	306	39	2,898
1908-9†	1,710	544	1,053	241	538	69	4,155
1909-10†	2,064	657	1,263	383	529	100	4,996
1910-11†	2,127	1,230	1,686	591	748	82	6,464
1911-12†	2,851	1,703	2,855	789	1,317	120	9,635

* For the calendar year 1901. † Railways only.

The following statement shows the total loan expenditure to the 30th June, 1912:—

GOVERNMENT RAILWAYS.—TOTAL LOAN EXPENDITURE IN EACH STATE AND IN THE COMMONWEALTH to 30th JUNE, 1912.

State, etc. ...	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
Expenditure ...	55,830,016	43,252,943	30,153,798	14,826,216	13,320,623	4,553,649	161,937,245

10. Gross Revenue, Total, per Average Mile Worked, and per Train-mile Run.—The following table shows the total revenue from all sources, the revenue per average mile worked, and the revenue per train-mile run in each State during 1901-2 and each financial year from 1908 to 1912 inclusive:—

GOVERNMENT RAILWAYS.—GROSS REVENUE, TOTAL, PER AVERAGE MILE WORKED, AND PER TRAIN MILE, 1901-2 and 1907-12.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
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TOTAL GROSS REVENUE (£,000 OMITTED).

	£	£	£	£	£	£	£	£
1901-2 ...	3,669	3,368	1,382	1,085	1,521	*233	13	11,271
1907-8 ...	4,944	3,873	1,951	1,741	1,502	278	15	14,304
1908-9 ...	5,028	4,178	2,103	1,639	1,509	280	13	14,750
1909-10 ...	5,486	4,444	2,338	1,841	1,637	284	12	16,042
1910-11 ...	6,042	4,896	2,731	2,045	1,844	278	12	17,848
1911-12 ...	6,491	5,219	3,033	2,148	1,885	313	12	19,101

GROSS REVENUE PER AVERAGE MILE WORKED.

	£	£	£	£	£	£	£	£
1901-2 ...	1,242	1,031	493	625	1,122	*498	86	886
1907-8 ...	1,425	1,141	602	936	821	591	99	993
1908-9 ...	1,412	1,230	611	868	765	596	90	992
1909-10 ...	1,513	1,291	662	972	779	600	84	1,054
1910-11 ...	1,627	1,397	719	1,068	807	582	79	1,127
1911-12 ...	1,709	1,473	732	1,109	763	622	81	1,130

GROSS REVENUE PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.	d.	d.	d.
1901-2 ...	75.58	71.62	58.55	62.07	81.00	*61.99	99.27	70.74
1907-8 ...	83.26	89.53	71.40	83.41	90.93	64.81	111.94	83.27
1908-9 ...	80.06	88.81	68.29	79.87	88.25	65.31	100.85	80.74
1909-10 ...	85.12	91.11	68.80	81.49	89.35	64.33	97.05	83.26
1910-11 ...	85.27	90.58	69.96	82.55	89.19	64.06	90.59	83.45
1911-12 ...	84.12	90.53	70.48	82.59	86.53	71.73	93.43	83.00

* For the calendar year 1902.

11. Coaching, Goods, and Miscellaneous Receipts.—The gross revenue is composed of (a) receipts from coaching traffic, including the carriage of mails, horses, parcels, etc., by passenger trains; (b) receipts from the carriage of goods and live stock, and (c) rents and miscellaneous items. The subjoined table shews the gross revenue for 1901-2 and 1907-12, classified according to the three chief sources of receipts. The total of the three items specified has already been given in the preceding paragraph hereof.

COACHING, GOODS, AND MISCELLANEOUS RECEIPTS, 1901-2 and 1907-12.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.*	North'n Terry.	C'wealth.
COACHING TRAFFIC RECEIPTS (£,000 OMITTED).								
	£	£	£	£	£	£	£	£
1901-2	1,368	1,580	435	373	448	110	...	4,309
1907-8	1,850	1,936	672	511	483	137	4	5,593
1908-9	2,008	2,041	730	529	489	138	4	5,939
1909-10	2,124	2,148	816	582	507	139	4	6,315
1910-11	2,386	2,355	935	650	596	144	4	7,070
1911-12	2,692	2,624	1,069	713	631	152	4	7,885

GOODS AND LIVE STOCK TRAFFIC RECEIPTS (£,000 OMITTED).

1901-2	2,264	1,720	862	689	1,037	116	...	6,688
1907-8	3,043	1,868	1,251	1,185	974	132	8	8,461
1908-9	2,965	2,067	1,347	1,060	974	134	7	8,554
1909-10	3,291	2,222	1,500	1,208	1,066	134	7	9,428
1910-11	3,585	2,458	1,772	1,341	1,174	124	5	10,459
1911-12	3,716	2,507	1,940	1,384	1,174	148	5	10,874

MISCELLANEOUS RECEIPTS (£,000 OMITTED).

1901-2	37	68	84	36	42	7	...	274
1907-8	51	70	28	45	45	9	2	250
1908-9	56	70	26	50	45	8	2	257
1909-10	71	79	22	50	64	11	2	299
1910-11	71	83	24	54	74	10	3	319
1911-12	84	87	23	52	80	12	4	342

* Tasmanian figures for 1902 are for year ended the 31st December.

(i.) *New South Wales.* In New South Wales, owing, no doubt, to the reductions made in rates and fares in recent years, and to the general prosperity of the State, the traffic receipts continue to shew substantial development, the total earnings for the past year having amounted to £6,491,473, an increase over the previous year of £449,268. The increases occurred in all branches of passenger and goods traffic, except in grain, flour, etc., and wool, which shewed a decrease of £15,009.

(ii.) *Victoria.* In Victoria each sub-division of traffic shewed an increase over the figures for the previous year and was also higher than in any previous year. The most notable increase was in passengers (£243,425, or 11.17 per cent.).

(iii.) *Queensland.* In Queensland the increase in 1911-12 in gross earnings, £302,428 above 1910-11, is to some extent accounted for by the opening of new lines, but it is stated that the expansion of traffic upon the older established lines has been enormous. The chief increases in earnings were in respect of passengers (£118,165, or 15.99 per cent.), general merchandise (£146,253, or 16.61 per cent.), and minerals £21,520, or 9.28 per cent.).

(iv.) *South Australia.* In this State the increase for the year 1911-12 in coaching traffic receipts amounted to £56,124; there was also a considerable increase in respect of minerals (£31,821); but the returns for wheat and wool shew a decrease of £57,677 and £3393 respectively. These figures are exclusive of the returns from the Port Augusta-Oodnadatta line.

(v.) *Western Australia.* In this State the earnings in 1911-12 shewed an increase, as compared with 1910-11. What may be regarded as personal traffic rendered an additional amount of £34,079, giving evidence of increased activity in business and pleasure, but goods and live stock shewed a very slight decrease (£575) on the record figures of the previous year. Miscellaneous receipts were £6681 higher than those for 1910-11.

(vi.) *Tasmania.* The gross revenue in 1911-12 shews an increase of £34,870 as compared with the previous year. This may be attributed to a good harvest, excellent markets on the mainland, renewed activity in mining, and the general prosperity of the State. Passenger traffic receipts afford an increase of £8171; while the increase in the revenue from goods and live stock is no less than £23,845.

The following table shews for the year 1911-12 the percentage which each class of receipts bears to the total gross revenue:—

**PERCENTAGE OF REVENUES FROM VARIOUS SOURCES ON TOTAL REVENUE,
1911-12.**

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N. Ter.	C'wlth.
	%	%	%	%	%	%	%	%
Coaching traffic receipts ...	41.47	50.29	35.27	33.18	33.48	48.70	29.66	41.28
Goods and live stock traffic receipts ...	57.24	48.03	63.97	64.40	62.28	47.39	39.83	56.93
Miscellaneous receipts ...	1.29	1.68	0.76	2.42	4.24	3.91	30.51	1.79

12. Coaching Traffic Receipts per Average Mile Worked, per Passenger-train Mile, and per Passenger Journey.—The subjoined table shews the receipts from coaching traffic per average mile of line worked, per passenger-train mile, and per passenger journey in each State and in the Commonwealth for the year ended the 30th June, 1912:—

**GOVERNMENT RAILWAYS.—COACHING TRAFFIC RECEIPTS PER MILE WORKED,
PER PASSENGER-TRAIN MILE, AND PER PASSENGER JOURNEY, 1911-12.**

State.	Number of Passenger- Train Miles.*	Number of Passenger Journeys.	Coaching Traffic Receipts.			
			Gross.	Per Average Mile Worked.	Per Pas- senger- Train Mile.	Per Pas- senger Journey.
	No. 000.	No. 000	£ 000.	£	d.	d.
New South Wales ...	8,978	70,707	2,692	708	71.95	9.13
Victoria ...	7,237	104,235	2,624	740	87.02	6.04
Queensland ...	2,969	17,081	1,069	258	86.71	15.01
South Australia† ...	2,614	18,353	713	368	65.27	9.28
Western Australia ...	2,480	16,390	631	255	61.06	9.24
Tasmania ...	396	1,715	152	255	92.12	21.27
Northern Territory	10	2	4	24	83.36	470.48
Commonwealth	24,684	228,483	7,885	476	76.66	8.28

* The returns include the undermentioned mixed-train mileage, which has been divided between passenger-train miles and goods-train miles in the proportion of one-third and two-thirds respectively in the case of the following States:—

New South Wales	1,541,407	Western Australia	983,469
Victoria	2,772,676	Tasmania	699,911

† Excluding the returns of the Port Augusta to Oodnadatta line.

The above table shews that, in the several States, there is a considerable difference in the amount of the average receipts per passenger journey. Disregarding the Northern Territory, this amount ranges from 6.04 pence in Victoria, where there is a large metropolitan suburban traffic, to 21.27 pence in Tasmania. The difference in these amounts cannot be accounted for by the amounts of rates charged, which are fairly uniform in the several States (see paragraph 20), but is largely due to the different traffic conditions which prevail on various lines in the Commonwealth (see paragraph 17). In order to adequately analyse these figures it would be necessary to have particulars regarding the number of passenger-miles, *i.e.*, the total distance travelled by passengers, in each State, which particulars are not generally available (see paragraph 18).

The preponderance in the number of passenger journeys in Victoria is accounted for, to a great extent, by the large number of metropolitan suburban passengers in that State. Of the total number of passengers carried in Victoria, 96,163,296 were metropolitan suburban passengers, *i.e.*, were carried between stations within twenty miles of Melbourne, while in New South Wales the number of suburban passengers (between stations within thirty-four miles of Sydney and Newcastle, and including Richmond and Branxton lines) was 62,590,908. In Sydney a large proportion of the metropolitan suburban traffic is carried on the electric and steam trainways, the number of passenger journeys during the year 1911-12 being 248,149,812. In Melbourne, on the other hand, the number of passengers carried on the cable tramways systems during the same period was 84,926,312; and on the St. Kilda-Brighton, Prahran-Malvern and the North Melbourne tramways was 9,905,774, making a total of 94,832,486, which is not as great as the number carried on the metropolitan suburban railways in Melbourne. This matter is referred to hereinafter. (See paragraph 17.)

13. Goods and Live-Stock Traffic Receipts per Mile Worked, per Goods-train Mile, and per Ton Carried.—The following table shews the gross receipts from goods and live-stock traffic per mile worked, per goods-train mile, and per ton carried for the year ended the 30th June, 1912:—

GOVERNMENT RAILWAYS.—GOODS AND LIVE STOCK TRAFFIC RECEIPTS PER MILE WORKED, PER GOODS-TRAIN MILE, AND PER TON CARRIED, 1912.

State:	Number of Goods-Train Miles.	Goods and Live-Stock Tonnage.	Goods and Live-Stock Traffic Receipts.			
			Gross.	Per Average Mile Worked.	Per Goods-Train Mile.	Per Ton Carried.
	No. ,000.	Tons ,000.	£ ,000.	£	d.	d.
New South Wales ...	9,543	10,910	3,716	978	98.43	81.74
Victoria ...	6,599	5,298	2,507	707	91.19	113.55
Queensland ...	7,858	3,494	1,940	468	63.27	133.25
South Australia† ...	3,415	2,782	1,384	714	97.26	119.37
Western Australia ...	2,747	2,542	1,174	475	102.57	110.84
Tasmania... ..	650	470	148	294	54.64	75.57
Northern Territory...	20	2	5	32	55.88	596.13
Commonwealth ...	30,332	25,498	10,874	657	86.04	102.35

* The returns include the undermentioned mixed-train mileage, which has been divided between passenger-train miles and goods-train miles in the proportion of one-third and two-thirds respectively in the case of the following States:—

New South Wales ...	1,541,407	Western Australia ...	983,469
Victoria	2,772,676	Tasmania	699,911

† Excluding the returns of the Port Augusta to Oodnadatta line.

From the above table it may be seen that, disregarding the Northern Territory, the average amount of freight paid per ton ranges from 75.57 pence in Tasmania to 133.25 pence in Queensland. The remarks made in the preceding paragraph (12) hereof with regard to the average fare paid per passenger and to passenger-miles, apply equally to the average amount of freight paid per ton and to ton-miles.

14. Working Expenses.—In order to make an adequate comparison of the working expenses of the Government railways in the several States, allowance should be made for the variation of gauges and of physical and traffic conditions, not only on the railways of the different States, but also on different portions of the same system. Where traffic is light, the percentage of working expenses is naturally greater than where traffic is heavy; and this is especially true in Australia, where ton-mile rates are in many cases based on a tapering principle—i.e., a lower rate per ton-mile is charged upon merchandise from remote interior districts—and where on many of the lines there is but little back-loading. Further, though efforts have been made from time to time to obtain a uniform system of accounts in the several States, the annual reports of the Commissioners do not yet comprise fully comparable data of railway expenditure.

The following table shows the total annual expenditure, comprising expenses on (a) maintenance of way, works, and buildings; (b) locomotive power—repairs and renewals; (c) carriages and wagons—repairs and renewals; (d) traffic expenses; (e) compensation; and (f) general and miscellaneous charges; and also the percentage of these expenditures upon the corresponding gross revenues in each State for 1901-2 and for each year 1907-12.

GOVERNMENT RAILWAYS.—TOTAL WORKING EXPENSES AND PERCENTAGES OF WORKING EXPENSES UPON GROSS REVENUES, 1901-2 and 1907-12.

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
TOTAL WORKING EXPENSES (£,000 OMITTED).								
	£	£	£	£	£	£	£	£
1901-2	2,342	2,166	993	690	1,256	173†	35	7,655
1907-8	2,715	2,436	1,054	969	1,008	202	14	8,398
1908-9	2,953	2,515	1,227	940	974	204	13	8,826
1909-10	3,276	2,818	1,414	1,069	1,037‡	212	13	9,699
1910-11	3,691	3,099	1,563	1,256‡	1,216‡	216	13	11,054
1911-12	4,170	3,442	1,917	1,363§	1,344	221	14	12,471
PERCENTAGE OF WORKING EXPENSES TO GROSS EARNINGS.								
	%	%	%	%	%	%	%	%
1901-2	63.85	64.32	71.83	63.54	82.58	74.31†	276.70	67.92
1907-8	54.91	62.89	54.01	55.68	67.10	72.70	97.22	58.71
1908-9	58.72	60.19	58.35	57.39	64.56	72.89	99.52	59.84
1909-10	59.73	63.41	50.48	58.09	66.99	74.52	101.53	61.70
1910-11	61.09	63.30	57.25	61.39‡	65.95	77.55	113.67	61.94
1911-12	64.23	65.95	63.22	63.46§	71.31	70.71	117.25	65.29

* Including amounts paid for pensions and gratuities, and also special expenditures and charges for belated repairs and in reduction of deficiencies as follows:—For the year 1901-2, £115,244; and for 1907-8, £150,122. † For the calendar year 1902. ‡ Excluding the returns of the Port Augusta to Oodnadatta line for the six months ended 30th June, 1911. § Excluding the returns of the Port Augusta to Oodnadatta line. || Including the cost of the replacement of rolling stock destroyed by fire (£22,649 in 1909-10 and £12,657 in 1910-11).

(i.) *New South Wales.* In this State the total working expenses in 1911-12 amounted to £4,169,591, an increase of £478,530 over the previous year. This increase was mainly owing to the large additional traffic, heavy repairs, and increased rates of pay to the staff.

(ii.) *Victoria.* In Victoria the increase in working expenses, £342,299, was mainly due to the greater traffic, to reductions in working hours and advances in salaries and wages of the staff, to a large contribution to the accident and fire insurance fund, to the

payment of £50,000 on renewals of rails, sleepers, and ballast, and extra expenditure in connection with additions and improvements.

(iii.) *Queensland.* In this State the working expenses increased from £1,563,119 (57.25 per cent.) in 1910-11 to £1,917,266 (63.22 per cent.) in 1911-12. The increase is mainly due to the advances in salaries and wages, and to the expenditure which is being incurred by the additional mileage in course of construction.

(iv.) *South Australia.* In South Australia the working expenses in 1911-12 shewed an increase of £107,765, viz., from £1,255,589 to £1,363,354. This was to a large extent due to augmented wages and extraordinary expenditure.

(v.) *Western Australia.* The cause of the increased expenditure £127,500 in 1911-12 as compared with 1910-11, is mainly due to increased train mileage.

(vi.) *Tasmania.* The working expenses in 1911-12 were £221,172, as compared with £215,530 in the previous year, being an increase of £5642.

From the preceding table it may also be seen that during the last five financial years there have been for the whole Commonwealth increases in the percentages of working expenses to gross earnings. This increase is partly due to the fact that in four of the States, consequent on the favourable results of previous years, reductions were made in passenger fares and freight rates.

(vii.) *Working Expenses per Average Mile Worked and per Train Mile Run.* The following table shews the working expenses per average mile worked and per train mile run in each State for the years 1901-2 and 1907-12:—

**GOVERNMENT RAILWAYS.—WORKING EXPENSES PER AVERAGE MILE WORKED,
AND PER TRAIN RUN, 1901-2 and 1907-12.**

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Cwth.
WORKING EXPENSES PER AVERAGE MILE WORKED.								
1901-2	£ 793	£ 663	£ 354	£ 397	£ 927	£ 370	£ 238	£ 602
1907-8	783	717	325	521	551	429	97	583
1908-9	829	740	356	500	494	434	87	594
1909-10	904	819	400	565	522	447	86	651
1910-11	994	884	412	656	532	451	90	698
1911-12	1098	971	463	704	544	440	95	738

WORKING EXPENSES PER TRAIN MILE RUN.

	d.	d.	d.	d.	d.	d.	d.	d.
1901-2	48.26	46.07	42.05	39.44	66.89	46.06	274.67	48.05
1907-8	45.72	56.31	38.56	46.44	61.01	47.12	108.83	48.89
1908-9	47.01	53.46	39.84	45.84	56.98	47.60	100.37	48.32
1909-10	50.84	57.77	41.61	47.34	59.86	47.94	98.54	51.38
1910-11	52.09	57.34	40.05	50.68	58.82	49.68	102.98	51.69
1911-12	54.03	59.70	44.55	52.41	61.71	50.72	109.55	54.19

* Including special expenditure and charges referred to in paragraph 14 hereof. † For the calendar year 1902.

15. **Distribution of Working Expenses.**—The subjoined table shews the distribution of working expenses, among four chief heads of expenditure, for the years 1901-2 and 1907-12:—

GOVERNMENT RAILWAYS.—DISTRIBUTION OF WORKING EXPENSES, 1901-2 and 1907-12.

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
MAINTENANCE (£,000 OMITTED).								
1901-2	554	490	356	167	247	158	29	1,901
1907-8	622	649	323	313	226	62	8	2,203
1908-9	628	626	325	270	210	62	7	2,198
1909-10	699	644	441	289	243	64	7	2,387
1910-11	810	803	500	343	272	66	3	2,802
1911-12	906	893	562	346	291	64	8	3,070

LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES (£,000 OMITTED).

1901-2	1,102	845	390	344	670	164	3	3,418
1907-8	1,250	956	417	442	484	81	4	3,634
1908-9	1,409	963	477	441	472	81	4	3,877
1909-10	1,616	1,226	562	512	545	85	3	4,549
1910-11	1,771	1,264	604	585	593	85	3	4,905
1911-12	1,985	1,390	794	663	656	88	4	5,570

TRAFFIC EXPENSES (£,000 OMITTED).

1901-2	589	672	226	163	306	142	2	2,000
1907-8	742	613	290	196	270	50	2	2,163
1908-9	805	641	330	210	264	51	2	2,303
1909-10	852	684	385	242	282	52	2	2,499
1910-11	968	767	429	302	317	54	1	2,838
1911-12	1,133	901	517	335	359	57	2	3,304

OTHER CHARGES (£,000 OMITTED).

1901-2	97	158	21	17	33	18	...	334
1907-8	102	218	23	19	27	9	...	398
1908-9	110	254	25	21	28	10	...	448
1909-10	109	264	26	26	27	11	1	464
1910-11	142	265	30	26	34	11	1	509
1911-12	145	257	44	29	38	12	1	526

* Including special expenditure and charges referred to in paragraph 14 hereof.

† For the calendar year 1902.

16. **Net Revenue, Total and per Cent. of Capital Cost.**—The table given hereunder shews the net sums available to meet interest charges, and also the percentage of such sums upon the capital cost of construction and equipment in each State for the years 1901-2 and 1907-12.

**GOVERNMENT RAILWAYS.—NET REVENUE AND PERCENTAGE OF NET REVENUE
UPON CAPITAL COST, 1901-2 and 1907-12.**

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'with.
NET REVENUE (£,000 OMITTED).								
	£	£	£	£	£	£	£	£
1901-2 ...	1,336	1,202	389	396	265	160	—22	3,616
1907-8 ...	2,229	1,438	897	772	494	76	...	5,906
1908-9 ...	2,076	1,663	876	698	535	76	...	5,924
1909-10 ...	2,209	1,626	924	771	541	73	...	6,143
1910-11 ...	2,351	1,797	1,167	785	628	62	—1	6,793
1911-12 ...	2,322	1,777	1,115	785	541	92	—2	6,630

PERCENTAGE OF NET REVENUE TO CAPITAL EXPENDITURE.

	%	%	%	%	%	%	%	%
1901-2 ...	3.27	2.96	1.94	2.98	3.58	11.56	—1.91	2.37
1907-8 ...	4.88	3.43	3.97	5.57	4.60	1.91	0.03	4.23
1908-9 ...	4.36	3.31	3.74	5.10	4.85	1.90	...	4.13
1909-10 ...	4.52	3.77	3.80	5.56	4.75	1.79	...	4.18
1910-11 ...	4.61	4.07	4.51	5.49	5.22	1.53	—0.15	4.45
1911-12 ...	4.34	3.88	3.95	5.26	4.09	2.15	—0.20	4.13

* In addition to ordinary working expenses, special expenditures and charges paid out of each year's gross revenue have been deducted; see paragraph 14 above. † For the calendar year 1902.

(i.) *Net Revenue per Average Mile Worked and per Train Mile Run.* Tables shewing the gross earnings and the working expenses per average mile worked and per train mile run have been given above. The net earnings, *i.e.*, the excess of gross earnings over working expenses, per average mile worked and per train mile run are shewn in the following tables:—

**GOVERNMENT RAILWAYS.—NET REVENUE PER AVERAGE MILE WORKED AND
PER TRAIN MILE RUN, 1901-2 and 1907-12.**

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
NET REVENUE PER AVERAGE MILE WORKED.								
	£	£	£	£	£	£	£	£
1901-2 ...	449	368	139	228	195	123	—152	284
1907-8 ...	643	423	277	415	270	161	2	410
1908-9 ...	583	490	254	371	271	162	...	398
1909-10 ...	609	473	262	407	257	153	...	404
1910-11 ...	633	513	308	412	275	131	—11	429
1911-12 ...	611	502	269	405	219	182	—14	392

NET REVENUE PER TRAIN MILE RUN.

	d.	d.	d.	d.	d.	d.	d.	d.
1901-2 ...	28.87	25.56	16.50	22.53	14.11	15.93	175.40	23.16
1907-8 ...	37.54	33.22	32.83	36.97	29.92	17.69	3.11	34.38
1908-9 ...	33.05	35.36	28.44	34.03	31.28	17.70	0.48	32.43
1909-10 ...	34.28	33.34	27.19	34.15	29.49	16.39	...	31.89
1910-11 ...	33.18	33.24	29.91	31.87	30.37	14.38	—12.39	31.77
1911-12 ...	30.09	30.83	25.93	30.18	24.82	21.01	—16.12	28.81

* See footnote * to preceding table. † See footnote † to preceding table.

17. **Traffic Conditions.**—Reference has already been made to the difference in the traffic conditions on many of the lines of the Commonwealth (see paragraphs 12, 13, and 14 hereof). These conditions differ not only in the several States, but also on different lines in the same State, and this is true with regard to both passenger and goods traffic. By far the greater part of the population of Australia is confined to a fringe of country near the coast, more especially in the eastern and southern districts. A large proportion of the railway traffic between the chief centres of population is therefore carried over lines in the neighbourhood of the coast, and is thus, in some cases, open to sea-borne competition. On most of the lines extending into the more remote interior districts traffic is light; the density of population diminishes rapidly as the coastal regions are left behind; there is a corresponding diminution in the volume of traffic, while, in comparison with other more settled countries, there is but little back-loading.

As an indication of the different traffic conditions prevailing in the several States, the following table is given shewing the numbers of passenger journeys and the tons of goods carried (a) per 100 of the mean population; and (b) per average mile worked of each State during the financial year 1911-12:—

PASSENGER JOURNEYS AND TONNAGE OF GOODS AND LIVE STOCK, 1911-12.

Particulars.		N.S.W.	Vic.	Q'land.	S.A.*	W.A.	Tas.	N.T.	C'wlth.
(a) PER 100 OF MEAN POPULATION.									
Passenger journeys	No.	4,163	7,784	2,745	4,389	5,572	886	53	5,001
Goods and live stock	Tons	642	896	561	665	864	242	56	558

(b) PER AVERAGE MILE OF LINE WORKED.

Passenger journeys	No.	18,610	29,420	4,121	9,470	6,632	3,409	12	13,811
Goods and live stock	Tons	2,871	1,495	843	1,435	1,028	934	13	1,541

* Exclusive of the returns of the Port Augusta to Oodnadatta line.

Particulars of the actual numbers of passengers and tons of goods and live stock carried have already been given (see paragraph 5 hereof).

(i.) *Metropolitan and Country Passenger Traffic.* A further indication of the difference in passenger traffic conditions might be obtained from a comparison of the volume of metropolitan, suburban, and country traffic in each State. Particulars are, however, available only for the States of New South Wales and Victoria. The subjoined table shews the number of metropolitan and country passengers carried in each of the States mentioned and the revenue derived therefrom during the year 1911-12:—

METROPOLITAN, SUBURBAN, AND COUNTRY PASSENGER TRAFFIC, 1911-12.

Particulars.	Number of Passenger Journeys.			Revenue.		
	Metropolitan.	Country.	Total.	Metropolitan.	Country.	Total.
N.S.W. ...	*62,590,908	8,115,820	70,706,728	*£723,462	£1,625,818	£2,349,280
Victoria ...	†96,163,296	8,071,486	104,234,732	†959,367	1,347,774	2,307,141

* Within 34 miles of Sydney and Newcastle, and including Richmond and Braxton lines.
† Within 20 miles of Melbourne.

From this table it may be seen that the number of passenger-journeys in country districts in Victoria is slightly less than the corresponding number in New South Wales, while the number of metropolitan passenger-journeys in Victoria is far greater

than in New South Wales, although in the latter State both Sydney and Newcastle are included. In Sydney a larger proportion of the suburban traffic is carried by the tramway systems than in Melbourne.

For several years it has been recognised that the suburban passenger transport, both in Sydney and in Melbourne, was increasing so rapidly that it must eventually become impossible to cope with under the existing systems. A scheme for the electrification of the Melbourne suburban lines was under the consideration of the Victorian Government in 1908, but owing chiefly to a doubt as to its success from a financial standpoint, its adoption was for a time deferred. In November, 1912, however, a Commission was appointed by Parliament to again consider the 1908 scheme, and, acting on its report, the Government decided to at once proceed with the electrification of the suburban lines. Contracts for the construction of power-houses and the necessary equipment are already in hand at an estimated cost of £1,226,000, and it is anticipated that a portion of the suburban railway system will be electrically operated by June, 1915. In Sydney a Metropolitan Railway Construction Branch of the Railway Department has been created to deal specially with this matter. The Minister has approved of the construction of an underground city railway, the route has been decided upon, and the plans are in course of preparation. The preliminary work in the location of a system of electric railways for the eastern, western and northern suburbs is also in hand.

(ii.) *Goods Traffic.* The differing conditions of the traffic in each State might also, to some extent, be analysed by an examination of the tonnage of various classes of commodities carried and of the revenue derived therefrom. Comparative particulars regarding the quantities of some of the leading classes of commodities carried on the Government railways are available for all the States except Tasmania; information regarding the revenue derived from each class of commodity is not, however, generally available in a comparable form. In this connection it may be stated that the following resolution was passed at the Interstate Conference of Railway Commissioners held in Melbourne in May 1909 (see paragraph 1, page 680 hereof):—"That in view of the variations in the character and classification of the goods traffic in the different States, the sub-divisions of tonnage carried and revenue in each State shall be those which best suit local conditions."

The following table shows the number of tons of various representative commodities carried, and the percentage of each class on the total tonnage carried during the financial year 1911-12:—

CLASSIFICATION OF COMMODITIES CARRIED, 1911-12.

State or Territory.*	Minerals.	Fire-wood.	Grain and Flour.	Hay, Straw, and Chaff.	Wool.	Live Stock.	All other Com-modities.	Total.
TONS CARRIED.								
New South Wales ...	Tons. 6,689,483	Tons. 248,387	Tons. 782,051	Tons. 281,081	Tons. 136,995	Tons. 535,481	Tons. 1,958,293	Tons. 10,631,751
Victoria ...	4937,498	570,849	848,732	289,028	100,368	411,684	2,159,526	5,297,685
Queensland ...	1,250,214	242,956	134,385	\$219,318	66,232	279,721	1,400,901	3,493,727
South Australia**	1,359,651	125,091	407,049	82,844	23,145	96,876	687,064	2,781,720
Western Australia...	443,501	694,046	154,364	106,101	6,889	61,770	1,075,466	2,542,087
North'n Territory§§	438	††	†† 1	††	...	24	1,452	1,895
PERCENTAGE ON TOTAL TONNAGE CARRIED.								
New South Wales ...	% 162.92	% 2.33	% 7.36	% 2.64	% 1.29	% 5.04	% 18.42	% 100.00
Victoria ...	117.70	10.77	16.02	5.46	1.89	7.77	40.39	100.00
Queensland ...	35.73	6.95	10.98	\$6.28	1.90	8.01	40.10	100.00
South Australia**	48.87	4.50	14.63	2.98	0.84	3.48	24.70	100.00
Western Australia...	17.45	27.30	6.07	4.17	0.27	2.43	42.31	100.00
North'n Territory§§	23.11	††	††0.05	††	...	1.27	75.57	100.00

* Tasmanian figures are not available. † Exclusive of 278,802 tons of coal, on which only shunting and haulage are collected. ‡ Coal, stone, gravel, and sand. § Sugarcane. ¶ Up journey. || Flour only. ** Exclusive of the returns of the Port Augusta to Oodnadatta line †† Included in all other commodities. ‡‡ Grain only. §§ For year ended 31st December, 1911.

18. Passenger-Mileage and Ton-Mileage.—The useful comparisons and analyses which can be made with regard to the operations of the Government railways in the Commonwealth are to some extent limited, by the absence in the annual reports of the Railway Departments of some of the States, of particulars relating to “passenger-mileage” (*i.e.*, the total distance travelled by passengers) and “ton-mileage” (*i.e.*, the total distance for which goods and live stock are carried), and it is not possible to furnish totals for the Commonwealth in respect of these important particulars. The matter of passenger-mileage and ton-mileage has already been referred to (see page 680). The following resolution in regard thereto was passed at the Interstate Conference of Railway Commissioners held in Melbourne in May, 1909:—“That, in view of the differing conditions in each State, and of the expense involved, it is undesirable to include passenger-mile and ton-mile statistics in the annual reports.” The general question as to the desirability of collecting and publishing “passenger-mile” and “ton-mile” statistics by railway companies in the United Kingdom has been made the subject of inquiry by a departmental committee appointed by the President of the Board of Trade. The report of this committee has been published in England as a parliamentary paper.¹

Information regarding “passenger-miles” and “ton-miles” is available either wholly, or in part, for four of the States only, *viz.*, New South Wales, South Australia, Western Australia, and Tasmania, but is not available at all for either Victoria or Queensland. Of the four States which give particulars of the nature indicated, New South Wales is the only one which furnishes the information in a classified form according to class of passengers and nature of commodities carried. The other three States supply particulars for all classes of passengers and goods together respectively. The mere record of the total number of passenger-miles and ton-miles for all classes of passengers and for all classes of goods respectively, although of considerable value, would appear to be insufficient to enable the whole field of railway operations to be adequately analysed, or the extent to which efficiency has been secured and improvements in working have been effected to be accurately gauged.

(i.) *Passenger-Miles.* Particulars for the whole of the Commonwealth period regarding total “passenger-miles” are available for one State only, namely, Tasmania. For the same period in New South Wales, but exclusive of 1911 and 1912, particulars are only available for suburban and extended-suburban traffic—*i.e.*, including all stations within 22 miles of Newcastle, within 34 miles of Sydney, and including Richmond and Braxton. For South Australia particulars are available for each year since 1904. No particulars are available for other States. In the tables given below the average number of passengers carried per “train,” etc., is obtained by dividing the number of “passenger-miles” by the number of “passenger-train-miles.” The averages given for New South Wales prior to 1911 are naturally smaller than those for the other States, since the figures for that State refer to suburban and extended-suburban traffic only.

1. See Cd. 4697. This report is also published at length in “The Statist,” London, 19th June, 1909, Vol. LXII, No. 1634. In this report it is stated that ton-mile statistics have been used in India for forty years and for a longer period in America. They are now compiled by the railways of nearly all foreign countries; in England, however, they are not generally compiled. Among the more important statistics deduced from ton-miles and passenger-miles the following are mentioned:—(a) The average Train Load of goods and of passengers, obtained by dividing the ton-mileage and the passenger-mileage respectively by the train-mileage. (b) The average Wagon Load and Carriage Load, obtained by dividing the ton-mileage by the wagon-mileage and the passenger-mileage by the carriage-mileage. (c) Ton-miles per Engine Hour. (d) The average Length of Haul for goods and passengers respectively, obtained by dividing the ton-mileage and the passenger-mileage by the tonnage and the total number of passengers conveyed. (e) The average Receipts per Ton per Mile and per Passenger per Mile, obtained by dividing the goods receipts by the ton-mileage and the passenger receipts by the passenger-mileage. (f) The average Density of Traffic per mile of road or per mile of track, obtained by dividing the ton-mileage and passenger-mileage by the length of road or by the length of track.

SUMMARY OF "PASSENGER MILES," 1901-2 and 1907-12.

Year ended the 30th June.	Passenger Train Mileage.	Number of Passenger Journeys.	Total Passenger Miles.	Amount Received from Passengers.	Average Number of Passengers carried per train.	Average Mileage per Passenger-journey.	Average Receipt per Passenger-mile.	Average Fare per Passenger-journey.
	Miles.	No. (,000 omitted).	No. (,000 omitted).	£	No.	Miles.	d.	d.

NEW SOUTH WALES.†

1902†	*	27,999	184,064	361,849	*	6.57	0.47	2.92
1908†	*	42,730	284,465	504,646	*	6.65	0.43	2.83
1909†	2,178,895†	46,734	310,399	546,904	142†	6.64	0.42	2.81
1910†	2,569,072†	48,147	341,498	564,463	133†	7.09	0.40	2.81
1911	8,093,526	60,920	906,217	2,074,860	112	14.88	0.55	8.17
1912	8,977,767	70,707	1,091,088	2,349,279	121	15.43	0.51	7.97

SOUTH AUSTRALIA.

1908	1,874,318	12,839	154,038	426,261	82	12.00	0.66	7.97
1909	1,975,455	13,855	160,763	435,430	81	11.60	0.65	7.54
1910	2,116,527	15,282	177,801	482,676	84	11.63	0.65	7.58
1911	2,404,729	16,620	195,216	535,527	81	11.75	0.65	7.73
1912¶	2,614,167	18,353	213,262	589,045	81	11.62	0.67	7.70

TASMANIA.

1902	335,604	761	19,444	88,541	58	25.60	1.09	27.91
1908	356,845	1,439§	32,639§	112,987	91	22.65	0.83	18.84
1909	373,633	1,547§	32,476§	113,546	87	20.99	0.84	17.61
1910	375,425	1,650§	34,066§	115,181	91	20.65	0.81	16.75
1911	381,301	1,682§	34,758§	119,454	91	20.66	0.82	17.04
1912	395,907	1,715§	34,292§	126,886	86	19.99	0.87	17.75

* Not available for suburban lines. † Suburban lines only for years 1902-1910; includes distances within 34 miles of Sydney and including Richmond and Braxton. ‡ Partly estimated. § Compiled on new basis, so as to be uniform with other States. ¶ Exclusive of the returns of the Port Augusta to Oodnadatta line for the six months ended 30th June, 1911. ¶ Exclusive of the returns of the Port Augusta-Oodnadatta line.

(ii.) *Ton-Miles.* Particulars regarding total "ton-miles" are available for each year since 1901 for the States of New South Wales, South Australia, and Tasmania; corresponding particulars for Western Australia are available for the last five years only. The average freight-paying load carried per "train" is obtained by dividing the total "ton-miles" in the fourth column by the goods-train mileage in the second column. In New South Wales the tonnage carried is exclusive of coal, on which only shunting and haulage charges are collected, and the amount of earnings specified excludes terminals. In South Australia and Tasmania they include terminals, while in Western Australia they exclude wharfage and jetty dues, but include all other charges.

SUMMARY OF "TON MILES" 1901-2 and 1907-12.

Year ended the 30th June.	Goods Train Mileage.	Total Ton Carried.	Total "Ton-Miles."	Earnings.	Average Freight-paying Load carried per "Train."	Average Miles per Ton.	Earnings per "Ton-mile."
	No.	No. (,000 omitted.)	No. (,000 omitted.)	£	Tons.	Miles.	d.

NEW SOUTH WALES.

1902	6,586,032	6,164	486,814	1,947,305	66.32	70.87	1.07
1908	7,746,484	9,804	617,642	2,597,980	79.73	63.00	1.01
1909	7,841,413	8,972	613,469	2,544,457	78.23	68.38	1.00
1910	8,197,953	8,149	690,150	2,866,070	84.19	84.69	0.99
1911	8,913,171	10,055	810,949	3,079,783	90.98	80.65	0.91
1912	9,543,553	10,632	862,016	3,181,771	90.32	81.08	0.89

SOUTH AUSTRALIA.

1902	2,468,326	1,392	170,523	681,045	69.09	122.48	0.96
1908	3,135,803	2,256	272,373	1,184,867	86.86	120.73	1.04
1909	2,949,901	2,166	267,271	1,060,077	90.60	123.42	0.95
1910	3,309,777	2,481	303,361	1,208,373	91.82	122.27	0.96
1911||	3,451,238	2,731	328,181	1,322,339	95.09	120.15	0.97
1912§	3,414,984	2,782	334,146	1,345,879	97.87	120.11	0.97

* WESTERN AUSTRALIA.

1907	1,939,959	2,091	144,856	964,653	74.67	69.26	1.60
1908	1,976,204	2,059	142,719	948,373	72.22	69.32	1.59
1909	2,011,468	1,997	143,629	945,956	71.41	71.92	1.58
1910	2,280,736	2,242	163,651	1,042,789	71.75	73.00	1.53
1911	2,548,450	2,489	182,738	1,154,662	71.71	73.42	1.52
1912	2,746,827	2,542	184,748	1,154,087	67.25	72.67	1.49

† TASMANIA.

1902†	567,314	407	14,331	109,266	25.26	35.30	1.82
1908	671,185	465	17,141	123,493	25.54	36.84	1.73
1909	655,486	467	17,257	125,375	26.33	36.92	1.74
1910	684,365	423	18,966	124,675	27.71	44.84	1.58
1911	659,750	346	16,382	115,008	24.83	47.32	1.68
1912	650,570	452	17,672	138,184	27.16	39.09	1.87

* Particulars for previous years not available. Exclusive of jetty returns. † Exclusive of live stock. ‡ To 31st December for year 1902, to 30th June for succeeding years. § Exclusive of the returns of the Port Augusta to Oodnadatta line for the six months ended 30th June, 1911. § Exclusive of the returns of the Port Augusta to Oodnadatta line.

(iii.) *Density of Traffic.* The average densities of passenger traffic and of goods traffic, obtained by dividing the passenger-mileage and the ton-mileage respectively by the average length of line worked during year, are shewn in the following table for the year 1911-12 for those States for which particulars are available :—

DENSITY OF TRAFFIC PER AVERAGE MILE OF LINE WORKED, 1911-12.

Density of—	N.S.W.	S. Aust.*	W. Aust.	Tasmania.
Passenger traffic	287,204	110,042	†	68,174
Goods „	226,906	172,418	79,938	35,133

* Exclusive of the returns of the Port Augusta to Oodnadatta line. † Not available.

(iv.) *Classification of Commodity Ton Mileage.* New South Wales is the only State for which particulars, specifying the ton-mileage and the earnings per ton-mile for various classes of commodities, are available. It is hoped that in future years it will be possible to give corresponding particulars for the other States.

The subjoined statement gives particulars for the last financial year. Miscellaneous traffic consists of timber, bark, firewood, bricks, drain-pipes, coal, road-metal in eight-ton lots, agricultural and vegetable seeds in five-ton lots, and traffic of a similar nature. A and B classes consist of lime, vegetables, tobacco leaf, caustic soda and potash, cement, copper ingots, fat and tallow, water and mining plant in six-ton lots, leather in one and three-ton lots, agricultural implements in five-ton lots, and other traffic of a similar nature. The table does not include 278,802 tons of coal on which only shunting and haulage charges were collected, nor does it include £53,894 for haulage, tonnage dues, etc.

NEW SOUTH WALES.—SUMMARY OF TON-MILEAGE FOR THE YEAR ENDED 30th JUNE, 1912.

Particulars.	Total Tons Carried.	Total Miles.	Average Miles per Ton.	Earnings (exclusive of Terminals).	Earnings per Ton-Mile.	Percentage on Total Tonnage.
	1000 Tons.	1000 Miles.	Miles.	£	d.	per cent.
Coal, coke, and shale ...	6,021	162,696	27.02	325,786	0.48	56.64
Other minerals ...	526	22,696	43.16	53,047	0.56	4.95
Crude ores ...	142	14,835	104.33	29,772	0.48	1.34
Miscellaneous ...	610	52,019	85.21	142,972	0.66	5.74
Firewood ...	248	7,490	30.16	23,275	0.75	2.33
Fruit ...	80	9,211	114.72	38,455	1.00	0.75
Grain and flour ...	782	202,786	259.30	298,365	0.35	7.36
Hay, straw, and chaff ...	281	61,031	217.13	93,767	0.37	2.64
Frozen meat ...	27	3,443	129.38	13,908	0.97	0.25
General goods ...	1	246	335.41	2,692	2.63	0.01
A Class ...	521	54,535	104.77	222,590	0.98	4.90
B „ ...	352	35,337	101.76	240,817	1.61	3.31
C „ ...	24	1,741	73.14	17,688	2.44	0.22
1st Class ...	128	17,929	140.57	216,927	2.90	1.20
2nd „ ...	216	33,803	156.33	510,312	3.62	2.03
Wool ...	137	41,388	302.11	331,423	1.92	1.29
Live stock ...	536	140,330	262.06	619,975	1.06	5.04
Total ...	10,632	862,016	81.08	3,181,771	0.89	100.00

THE GOVERNMENT RAILWAY SYSTEMS OF THE COMMONWEALTH.



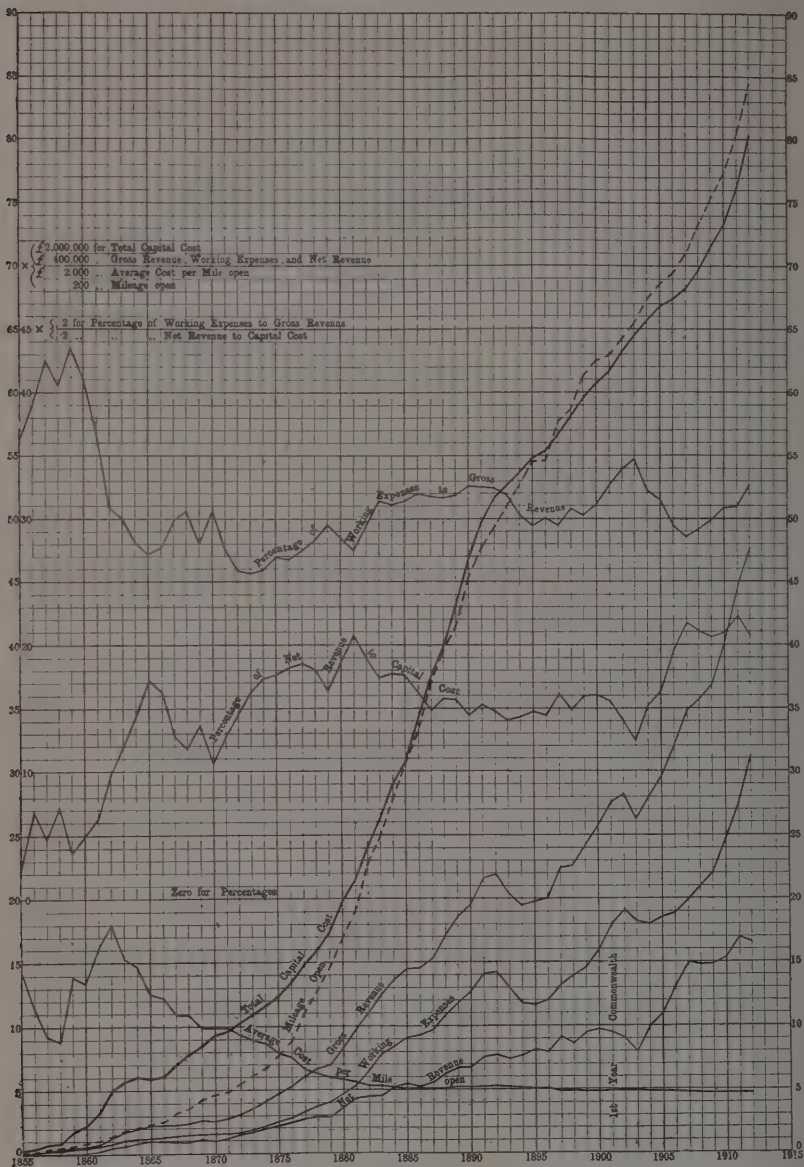
EXPLANATION OF MAP.—The continuous lines denote the existing railway lines of Australia, the heavier lines being the main routes.

Of the two transcontinental lines, viz., one joining the railways of South and Western Australia—and thus connecting continuously by railway Queensland, New South Wales, Victoria, South Australia, and Western Australia, and one connecting Oodnadatta in South Australia with Pine Creek in the Northern Territory, the former has been commenced, and is shewn — — — —; while the latter, the construction of which is to be deferred for the present, is shewn - - - - -.

LIST OF PRINCIPAL SECTIONS OF RAILWAYS.

	Miles.		Miles.		Miles.
Townsville to Winton	368	Sydney to Bourke	508	Adelaide to Broken Hill	335
Townsville to Selwyn	552	Sydney to Hay	460	" Oodnadatta	688
Rockhampton to Longreach	428	" Nimmitabel	291	Perth to Laverton	586
Brisbane to Cunnamulla	604	" Melbourne (17 hrs.)	582½	" Meekatharra	640
Brisbane to Sydney (27 hrs.)	725	Melbourne to Adelaide (17½ ")	482½	" Albany	340
Newcastle to Inverell	405	" Merbein	358	Hobart to Launceston	133
		" Swan Hill	215		

GRAPHS SHEWING THE FINANCIAL POSITION OF THE GOVERNMENT RAILWAYS OF THE COMMONWEALTH, 1855 TO 1912.



(See pages—total capital cost, 700; mileage open, 685; gross revenue, 701; working expenses 705; net revenue, 708; average cost per mile, 700; percentage of working expenses to gross revenue, 705; percentage of net revenue to capital cost, 708.)

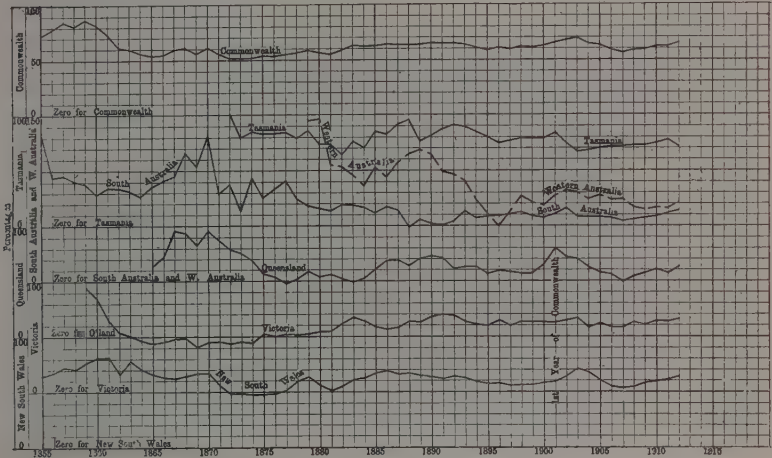
EXPLANATION OF GRAPHS.—In the above diagram the base of each small square represents throughout one year. The significance of the vertical height of each square varies, however, according to the nature of the several curves.

In the heavy curve denoting the total capital cost of the railways of the Commonwealth, the vertical side of each square denotes £2,000,000.

In the three lighter curves, representing (i.) gross revenue, (ii.) working expenses, and (iii.) net revenue, the vertical height of each single square denotes £400,000. For the curve of average cost per mile open, the vertical side of the small square denotes £2000. The mileage open is shewn by a dotted curve the vertical side of each square representing 200 miles.

For the percentages a new zero is taken at "20" on the scale for the general diagram. The vertical height of each square represents 2 percent. in the curve shewing the percentage of working expenses to gross revenue. For the curve of percentage of net revenue to capital cost, the vertical height of each square represents only 0.2, that is to say, the vertical scale is ten times that of the preceding curve.

GRAPHS SHEWING PERCENTAGES OF WORKING EXPENSES TO GROSS REVENUE FOR
GOVERNMENT RAILWAYS FOR STATES AND COMMONWEALTH, 1855 TO 1912.

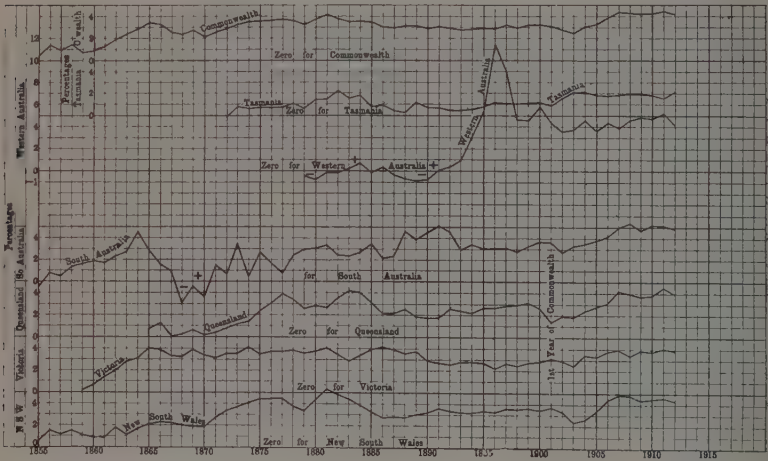


(See page 705.)

EXPLANATION OF GRAPHS.—In the above diagram the base of each small square represents throughout one year. The vertical side of a small square denotes throughout 10 per cent., the heavy zero lines being different for each State and the Commonwealth, with, however, one exception, viz., that the zero line for South Australia and Western Australia is identical.

The curve for Victoria commences in 1859; that for Queensland in 1865; that for Tasmania in 1872; and that for Western Australia in 1879, these being the years in which the Government Railway systems of the several States were inaugurated.

GRAPHS SHEWING PERCENTAGES OF NET REVENUE TO CAPITAL COST OF GOVERNMENT RAILWAYS FOR STATES AND COMMONWEALTH, 1855 TO 1912.



(See page 708.)

EXPLANATION OF GRAPHS.—In the above diagram the base of each small square represents throughout one year. The vertical side of a small square denotes 1 per cent., the thick zero lines, however, for each State and for the Commonwealth being different. This was necessary to avoid confusion of the curves.

Where the curve for any State falls below that State's zero line, loss is indicated, the working expenses having exceeded the gross revenue.

The curve for Victoria commences in 1859; that for Queensland in 1865; that for Tasmania in 1872; and that for Western Australia in 1879, these being the years in which the Government railway systems of the several States were inaugurated.

19. Interest Returned on Capital Expenditure.—It may be seen from the figures given in the table in paragraph 16 hereof, that the Government railways in Australia have, on the whole, made a substantial profit during each year since the inception of the Commonwealth, but unfortunately the community does not get the full benefit of this profit, owing to the high rates of interest at which money for railways was borrowed in the early days. Though the average rate during the year ended the 30th June, 1912, was 4.18 per cent., an average does not accurately express the position. At an early period the need of constructing railways for the sole purpose of opening up undeveloped districts was recognised, and lines were built which could not possibly pay for some years to come; as these railways always preceded population the money had to be raised at an almost speculative rate of interest, frequently amounting to 6 per cent. while the more recent loans have been effected at less than 4 per cent., hence the railways have been handicapped by a burdensome interest. At the present time also, spur lines are constructed, which can scarcely be expected to instantly return revenue in excess of the expenditure, and so must, for a time at any rate, be a charge on the more developed branches of the railway systems, and tend to increase the ratio of working costs to revenue. It may be noted, however, that although the loans made for expenditure on railway construction and equipment very largely increase the amount of the public debt of the Commonwealth, forming, in fact, more than half the total debt, the money borrowed has not been sunk in undertakings which give no return, but has been expended on works which are increasingly reproductive, yielding in most cases a direct return on the capital expended, and representing a greater value than their original cost. In Europe the national debts of various countries have been incurred principally through the expenses of prolonged wars, and the money has gone beyond recovery, but in Australia the expenditure is represented to a large extent by public works which pay a direct return, which is, on the whole, greater than the amount of interest due upon capital invested. In addition to the purely commercial aspect of the figures relating to the revenue and expenditure of the Commonwealth railways, it is of great importance that the object with which many of the lines were constructed should be kept clearly in view; the anticipated advantage in building these lines has been the ultimate settlement of the country rather than the direct returns from the railways themselves, and the policy of the State Governments has been to use the railway systems of the Commonwealth for the development of the country's resources, to the maximum extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges. Further, the money has been spent in developing immense agricultural, pastoral, and mineral resources, which add to the wealth of the community, while the benefits conferred in providing a cheap and convenient mode of transit, and in generally furthering the trade and the best interests of the Commonwealth, are incalculable.

(i.) *Profit or Loss after Payment of Working Expenses and Interest.*—The net revenue of the Government railways in each State after payment of working expenses is shewn in paragraph 16 hereof. The following table shews the amount of interest payable on expenditure from loans on the construction and equipment of the railways in each State, the actual profit or loss after deducting working expenses and interest and all other charges from the gross revenue, and the percentage of such profit or loss on the total capital cost of construction and equipment.

In this table the positive sign indicates a profit, the negative a loss. For the Commonwealth as a whole there has been a net profit on the Government railways during each of the last seven years.

The same satisfactory state of affairs applies also to the States of New South Wales, South Australia proper, and Western Australia, and with the exception of the year 1907-8,

to Victoria. Tasmania and the Northern Territory both shew a loss for each year of the period 1902 to 1912, as also does Queensland, with the exception of the years 1906-7, 1910-11, and 1911-12.

GOVERNMENT RAILWAYS.—INTEREST ON LOAN EXPENDITURE, PROFIT OR LOSS, AND PERCENTAGE OF PROFIT OR LOSS ON TOTAL COST, 1901-2 and 1907-12.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'with.
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AMOUNT OF INTEREST ON RAILWAY LOAN EXPENDITURE (£,000 OMITTED).

	£	£	£	£	£	£	£	£
1901-2	1,435	1,493	837	470	235	140	47	4,657
1907-8	1,649	1,484	932	494	343	149	47	5,098
1908-9	1,687	1,428	935	500	355	150	47	5,102
1909-10	1,687	1,471	973	508	368	152	47	5,206
1910-11	1,797	1,515	953	521	382	156	47	5,371
1911-12	1,906	1,511	1,070	542	415	159	47	5,650

PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND OTHER CHARGES (£,000 OMITTED).*

	£	£ [†]	£	£	£	£	£	£
1901-2	-108	-291	-448	-74	+30	-81	-69	-1,041
1907-8	+580	-47	-35	+277	+151	-73	-46	+807
1908-9	+389	+235	-59	+198	+179	-74	-47	+821
1909-10	+522	+155	-49	+263	+173	-80	-47	+937
1910-11	+554	+282	+214	+269	+245	-93	-48	+1,423
1911-12	+415	+266	+46	+243	+126	-68	-48	+980

PERCENTAGE OF PROFIT OR LOSS TO CAPITAL COST OF CONSTRUCTION AND EQUIPMENT.*

	%	% [†]	%	%	%	%	%	%
1901-2	-0.27	-0.71	-2.22	-0.59	+0.41	-2.10	-5.96	-0.82
1907-8	+1.27	-0.11	-0.15	+1.99	+1.41	-1.84	-3.92	+0.58
1908-9	+0.83	+0.55	-0.26	+1.11	+1.63	-1.85	-3.98	+0.57
1909-10	+1.07	+0.36	-0.20	+1.90	+1.52	-1.97	-4.00	+0.64
1910-11	+1.09	+0.64	+0.83	+1.87	+2.04	-2.29	-4.12	+0.93
1911-12	+0.78	+0.58	+0.16	+1.63	+0.95	-1.59	-4.66	+0.61

* The positive sign indicates a profit, the negative a loss. † Allowing for payment of special expenditure and charges (see paragraph 14 above).

20. Passenger Fares and Goods Rates.—Considerable reductions have been made in recent years in passenger fares and in freight rates. These fares and rates are not only changed from time to time to suit the convenience and varying necessities of the railways, but, as traffic is developed and revenue increased, they are also in many cases reduced to an extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges.

(i.) *Passenger Fares.* On the Australian Government railways two classes are provided for passenger traffic. The fares charged may be classified as follows:—(a) Fares between specified stations (including suburban fares). (b) Fares computed according to mileage rates. (c) Return, season, and excursion fares. (d) Special fares for working-

men, school pupils, and others. Fares in class (a) are issued at rates lower than the ordinary mileage rates. Fares in class (b) are charged between stations not included in class (a). Generally it may be said that mileage-rate fares are computed on the basis of about twopence per mile for first-class and about $1\frac{1}{4}$ pence per mile for second-class single tickets. In Tasmania, however, the fares are computed on the general basis of $1\frac{1}{2}$ pence per mile first-class, one penny per mile second-class, with a terminal charge of one penny, with one-sixth added to total. In New South Wales, Victoria, and Queensland the mileage rates are based upon a tapering principle, i.e., a lower charge per mile is made for a long journey than for a short journey. With the exception of New South Wales and Tasmania first-class return fares are generally about $1\frac{1}{2}$ to $1\frac{3}{4}$ times the single fare, and the second-class are about 30 to 45 per cent. lower than the first-class fares. In New South Wales passenger fares were reduced on the 28th May, 1911, to the amount of £70,000 per annum, and the issue of return tickets abolished except between stations in the Sydney and Newcastle suburban areas, and between the States and in the tourist districts. In Tasmania the issue of return tickets has been discontinued except in a few special cases. In Western Australia special summer recreation fares have been granted by which women and children can travel distances up to 800 miles and return for fares of 25s. and 12s. 6d. respectively. These concessions enable them to escape the heat of the goldfields and spend the summer at one of the coastal towns. In April, 1913, the New South Wales Government decided to discontinue the issue of return tickets for inter-state railway journeys as from the 1st May, 1913, and consequently these tickets will, from that date, be no longer available between State and State, except between Victoria and South Australia.

The following table shews the passenger fares for different distances charged in each State, between stations for which specific fares are not fixed:—

ORDINARY PASSENGER MILEAGE RATES ON GOVERNMENT RAILWAYS, 1912.

State.	For a journey of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
FIRST-CLASS SINGLE FARES.						
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales*	4 6	10 9	23 3	35 9	48 3	58 0
Victoria ...	7 6	15 0	30 0	44 6	58 2	72 0
Queensland ...	8 6	16 0	31 0	45 1	58 2	71 4
South Australia†	8 4	16 8	33 4	50 0	66 8	83 4
Western Australia ...	8 4	16 8	33 4	50 0	66 8	83 4
Tasmania ...	7 5	14 8	29 3	...	...	...
Average‡	7 5	14 11	30 0	45 1	59 7	73 7
Average per passenger-mile‡ d.	1.78	1.79	1.80	1.80	1.78	1.77

SECOND-CLASS SINGLE FARES.

	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales* ...	2 0	7 1	14 9	22 1	25 8	33 6
Victoria ...	5 0	10 0	20 0	29 8	38 10	47 10
Queensland ...	5 8	10 4	19 9	28 2	35 8	43 2
South Australia†	5 3	10 5	20 10	31 3	41 8	52 1
Western Australia ...	5 3	10 5	20 10	31 3	41 8	52 1
Tasmania ...	5 0	9 10	19 7	...	...	...
Average‡	4 8	9 8	19 4	28 6	36 8	45 9
Average per passenger-mile‡ d.	1.12	1.16	1.16	1.14	1.10	1.10

* Inclusive of suburban rates for 34 miles. † Ordinary mileage rates are not published; the amounts given are therefore computed from fares between specified stations. ‡ Exclusive of Tasmania for hauls of 300 miles and upwards.

(ii.) *Parcel Rates.* In all the States parcels may be transmitted by passenger train upon payment of the prescribed rates, which are based upon weight and distance carried. The rates vary slightly in the different States. In New South Wales they range from threepence for a parcel not exceeding 3 lbs. for any distance up to 75 miles, to eleven shillings and threepence for a parcel weighing from 84 lbs. to 112 lbs., for a distance of 500 miles. In Victoria the charge for a parcel weighing from 84 lbs. to 112 lbs. for a distance over 450 miles is twelve shillings. The rate in Queensland for a parcel weighing from 85 to 112 lbs. for 500 miles is twelve shillings and sixpence; in South Australia eleven shillings and threepence; in Western Australia thirteen shillings; and in Tasmania for a distance of 250 miles the rate is five shillings and sixpence.

(iii.) *Goods Rates.* The rates charged for the conveyance of goods and merchandise may generally be divided into three classes, viz.:—(a) Mileage rates, (b) District or "development" rates, and (c) Commodity rates. In each of the States there is a number—ranging from 8 in Victoria to 15 in Tasmania—of different classes of freight. Most of the mileage rates are based upon a tapering principle, *i.e.*, a lower charge per ton-mile is made for a long haul than for a short haul; but for some classes of freight there is a fixed rate per mile irrespective of distance. District rates are charged between specified stations and are somewhat lower than the mileage rates, excepting in Western Australia, where the terms refer to a special toll of 1s. per ton on goods travelling over certain "district" railways as part payment of the extra cost of working lines laid for developmental purposes through sparsely settled districts. In addition to the ordinary classification of freights under class (a), certain commodities, such as wool, grain, agricultural produce, and crude ores, are given special rates, lower than the mileage rates, under class (c).

Space will not permit of anything like a complete analysis of goods rates in the several States being here given. As an indication of the range and amount of such rates the subjoined tables are given. The first table shews for each State the truck-load rates charged for hauls of different distances in respect of agricultural produce not otherwise specified; these special rates are here given for this class of produce, since it is generally forwarded in truck-loads.

RATES FOR AGRICULTURAL PRODUCE IN TRUCK-LOADS ON GOVERNMENT RAILWAYS, 1912.

State.	Charge per Ton in Truck-loads for a Haul of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
New South Wales	s. d. 5 0	s. d. 7 6	s. d. 9 6	s. d. 10 6	s. d. 11 4	s. d. 12 0
Victoria	5 6	8 6	10 6	12 4	14 0	15 8
Queensland	4 7	8 9	11 0	12 0	13 0	14 0
South Australia	6 2	8 9	12 11	17 1	21 3	25 5
Western Australia	6 8	8 11	12 1	17 0	22 0	24 0
Tasmania	6 9	9 8	13 0	...	...	...
Average*	5 8	8 8	11 6	13 9	16 3	18 3
Average per ton-mile*	1.36	1.04	0.69	0.55	0.48	0.43

* Exclusive of Tasmania for hauls of 300 miles and upwards.

The next tables shew for each State the ordinary mileage rates charged per ton for hauls of different distances in respect of (a) the highest-class freight, and (b) the lowest-class freight:—

ORDINARY GOODS MILEAGE RATES ON GOVERNMENT RAILWAYS, 1912.

State.	Charge per Ton for a Haul of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.

HIGHEST-CLASS FREIGHT.

	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
New South Wales	23	0	44	11	78	3	99	1	107	5	115	9
Victoria	21	3	42	0	79	6	108	9	133	9	158	9
Queensland	41	8	75	0	133	4	191	8	220	10	235	5
South Australia	27	1	52	1	97	11	134	7	166	8	194	2
Western Australia	32	1	54	2	97	6	135	5	167	11	195	0
Tasmania	33	9	54	0	100	0	...	...	...	...	...	...
Average*	29	9	53	8	97	9	133	11	159	4	179	9
Average per ton-mile*	d.	7.14	d.	6.44	d.	5.86	d.	5.35	d.	4.88	d.	4.31

LOWEST-CLASS FREIGHT.

	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
New South Wales	2	6	3	7	5	8	7	9	9	10	11	11
Victoria	4	3	6	8	10	0	11	10	13	6	15	2
Queensland	4	7	8	9	15	0	19	2	23	4	27	6
South Australia †	4	2	7	10	13	7	17	9	21	11	26	1
Western Australia	5	0	8	4	14	2	19	2	23	4	27	6
Tasmania	5	0	6	9	8	6	...	...	...	...	...	...
Average	4	2	7	0	11	1	15	1	18	5	21	7
Average per ton-mile*	d.	1.00	d.	0.84	d.	0.66	d.	0.60	d.	0.55	d.	0.51

* Exclusive of Tasmania for hauls of 300 miles and upwards. † Less 20 per cent. for artificial manures.

The classification of commodities varies in the several States. Generally, the highest-class freight includes expensive, bulky, or fragile articles, while the lowest-class comprises many ordinary articles of merchandise, such as are particularly identified or connected with the primary industries of each State.

In New South Wales, for example, the highest-class freight comprises such articles as boots, drapery, drugs, groceries, furniture, liquors, crockery and glassware, cutlery, ironmongery, confectionery, and carpets. In the same State the lowest-class freight includes agricultural produce, ores, manures, coal, coke, shale, firewood, limestone, stone, slates, bricks, screenings, rabbit-proof netting, timber in logs, and posts and rails.

21. **Numbers and Description of Rolling Stock, 1912.**—The following table shews, so far as possible in a comparable manner, the number of locomotives and of various classes of rolling stock in use on the Government railways in each State. The figures

given are subject to certain limitations, inasmuch as the classification adopted, and also the various types of rolling stock in use, are not identical in the several States. In Victoria and Queensland, for example, the brake-vans classified under the heading of coaching vehicles are used indiscriminately for coaching and goods traffic. Again, it is believed that in New South Wales the number of passenger vehicles is really greater than that shewn, certain of the other classes of vehicles being used for composite purposes.

CLASSIFICATION OF LOCOMOTIVES AND ROLLING STOCK, 1911-12.

State or Territory	N.S.W.	Victoria.		Qld.	South Australia.				W.A.	Tasmania.	N.T.†	Total	
Gauge...	ft. in. 4 8½	ft. in. 5 3	ft. in. 2 6	ft. in. 3 6	ft. in. 5 3	ft. in. 3 6	Tram- ways. ft. in. ft. in. 5 3 3 6		ft. in. 3 6	ft. in. 3 6	ft. in. 2	ft. in. 3 6	—
(a) Locomotives.													
Tender ...	762	*460	...	496	95	†176	...	...	359	65	...	5	...
Tank ...	180	150	11	39	72	7	...	...	...	7	7	1	...
Total ...	942	610	11	535	167	183	...	...	359	72	7	6	2,892
(b) Coaching Stock.													
Passenger vehicles	1,244	1,311	21	597	271	120	13	2	355	165	6	4	...
(Joint stock)	...	12	...	...	8	...	...	...	...	...	...	...	...
Brake vans	...	421	1	3	31	28	...	...	20	13	...	2	...
(Joint stock)	...	2	...	...	2	...	...	...	...	...	...	...	...
Horse boxes	...	57	...	65	21	30	...	...	54	35	...	...	...
Carriage trucks	297	...	...	...	...	...	...	...	...	3	...	...	...
Post office vans	...	6	...	8	3	10	...	...	6	2	...	...	...
Other	...	7	...	...	2	3	...	...	6	...	...	1	...
Total ...	1,541	1,816	22	673	338	191	13	2	441	218	6	7	5,268
(c) Goods and Live Stock Wagons.													
Wagons ...	16,218	14,084	195	10,512	2,827	4,454	26	52	7,845	1,539	77	130	...
Brake vans	485	...	...	166	75	102	...	...	133	...	...	1	...
Departmental	1,085	150	...	231	106	140	...	...	86	45	...	7	...
Total ...	17,788	14,234	195	10,909	3,008	4,696	26	52	8,064	1,584	77	138	60,771

* Not including two passenger motors. † Not including four motors. ‡ Transferred from the South Australian Government to the Commonwealth Government on 1st January, 1911.

22. Number of Railway Employees.—The following table shews the number of employees in the Railway Departments of each State in the year 1901 and in each year from 1908 to 1912 inclusive, classified according to (a) salaried staff, and (b) wages staff.

From these figures it will be seen that there has been a steady increase in the number of persons engaged in the Railway Departments of the several States. During the period from 1901 to 1912, the total for the Commonwealth has increased from 42,321 to 75,668—an increase of 33,342, or about 78.78 per cent. The largest numerical increase for the individual States was that of New South Wales, viz., 15,842.

Separate returns for salaried and wages staff are not available for South Australia; the number of salaried staff is therefore included in the wages staff.

**GOVERNMENT RAILWAYS.—NUMBER OF EMPLOYEES IN RAILWAY DEPARTMENTS,
1901 and 1908-12.**

State.	1901.		1908.		1909.		1910.		1911.		1912.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
New South Wales* ...	1,372	11,747	1,985	15,939	2,163	17,295	2,369	17,854	2,799	21,388	2,977	25,984
Victoria ...	1,432	10,524	1,649	12,900	1,644	12,825	1,831	14,735	2,111	17,622	2,243	19,910
Queensland ...	994	4,633	1,256	4,766	1,237	6,583	1,471	5,769	1,664	6,364	1,877	7,131
South Australia† ...	...	3,855	...	6,326	...	6,274	...	7,086	...	7,552	...	8,569
Western Australia ...	876	5,407	802	4,805	769	4,906	779	5,147	872	6,079	935	6,627
Tasmania ...	178	1,252	182	1,077	190	1,111	195	1,292	203	1,232	200	1,147
Northern Territory ...	†	51	†	75	†	84	†	91	6	61	7	56
Commonwealth ...	4,852	37,469	5,874	45,888	6,003	49,076	6,645	51,974	7,655	60,298	8,239	69,424

* Exclusive of gate-keepers with free house only. † Separate returns for salaried and wages staffs are not available; the number of salaried staff is included with the wages staff.

23. **Accidents.—Number of Killed and Injured.**—The subjoined table gives particulars of the number of persons killed and injured through train accidents and the movement of rolling stock on the Government railways in each State for the year 1900-1, and for each of the years 1907-8 to 1911-12 inclusive:—

**GOVERNMENT RAILWAYS.—TOTAL NUMBER OF PERSONS KILLED AND INJURED,
1901 and 1907-12.**

State.	1900-1.		1907-8.		1908-9.		1909-10.		1910-11.		1911-12.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales ...	†	†	44	355	43	249	50	338	46	368	68	513
Victoria ...	45	371	79	970	45	451	21	353	49	829	67	362
Queensland ...	13	100	3	143	11	201	14	382	16	104	25	235
South Australia ...	8	50	15	133	12	155	10	243	13	215	16	186
Western Australia* ...	5	205	14	271	16	284	13	99	13	114	20	121
Tasmania ...	1	8	2	21	2	28	...	21	1	34	...	37
Northern Territory ...	...	...	1	...	...	...	...	...	...	1	...	...
Commonwealth ...	...	...	158	1,892	129	1,368	108	1,436	138	1,665	196	1,454

* The returns up to and including the year 1908-9 include all accidents which have occurred on Railway premises as well as those caused through train accidents and movement of rolling stock.
† Not available.

(c) Graphical Representation of Government Railway Development.

1. **General.**—Its railways are so important a factor in the development of Australia that it has been deemed desirable to graphically represent the main facts of their progress from their beginning, viz., from 1855 onwards. To this end the graphs shewn on pages 716 to 718 have been prepared. The distribution of the railways is shewn on the map on page 715.

2. **Capital Cost and Mileage Open** (page 716).—The graph shows that the ratio between these elements was, naturally enough, very variable from 1855 to 1870

consequent upon progressive decrease in cost of construction. It then became subject to a more regular change, implying reduction of average cost.

3. Cost per Mile Open.—The fluctuations in cost per mile open are clearly indicated by the graph on page 716. In 1855 the cost per mile open was no less than £28,430; by 1858 it had fallen to £17,752, when it rose again to a maximum of £35,958 in 1862. It then diminished rapidly till 1883—when it reached £10,496 per mile—then slowly till 1887, when it amounted to £10,017 per mile. Again rising, this rate attained to £10,537 in 1892, since when it has, on the whole, been declining, reaching its lowest value, £9486, in 1911.

4. Gross Revenue.—This graph (page 716) exhibits considerable irregularities, the most striking of which are the maxima at 1892 and 1902. The fall commencing in 1892 was in consequence partly of the commercial crisis and partly of the then droughty conditions of several of the States, while that of 1902-3 was due to drought. In the latter case the recovery was very rapid.

5. Working Expenses and Net Revenue.—The characteristics of these graphs (page 716), are similar to those of "Gross Revenue," and the same remarks apply. It may be noted, however, that the working expenses in 1912 increased at a faster rate than gross and net revenue.

6. Percentage of Working Expenses to Gross Revenue.—This is shewn for each State and for the Commonwealth on page 717, and for the Commonwealth only, on a larger scale, on page 716. The curve shews considerable fluctuations, but points also to the fact that, although a slight rise occurred in 1908, there was from 1903 to 1907 a rapid, and therefore very satisfactory, decline in the percentage of working expenses to gross revenue; since 1907, however, there has been a steady increase. The fluctuations of this percentage, for the individual States, call for no special comment.

7. Percentage of Net Revenue on Capital Cost.—For the Commonwealth this graph is shewn on a large scale on page 716 and on page 718 both for Commonwealth and States. After exhibiting somewhat remarkable oscillations in the earlier years, and less marked ones between 1885 and 1900, and also a rapid fall to 1903, the curve from that year shews a well marked increase until the year 1908, a slight fall occurring in that year and in 1909. The rise in 1911 is followed by a fall in 1912. Maxima were reached in 1865, 1877, 1881, 1907, and 1911—viz., 3.44, 3.71, 4.14, 4.36 and 4.45 per cent.

For the individual States the results are in general very satisfactory, although the increases in the percentages for recent years have not been quite maintained in the year 1912, with the exception of Tasmania, the figures for which State constituted a maximum in 1912.

The remarkable maximum for Western Australia in 1896 is consequent upon the large use made of the western railways at the time of the development of the Western Australian goldfields.

8. General Indications of Graphs.—Reviewing the cost of railways, as a whole, it may be noted that for the periods indicated the average cost per mile open is as follows:—

**GOVERNMENT RAILWAYS.—AVERAGE COST PER MILE OF LINE OPEN,
COMMONWEALTH, 1855 to 1912.**

Period	1855-1872.	1873-1882.	1883-1892.	1893-1902.	1903-1912.
Cost per mile	£ 24,561	£ 18,700	£ 10,286	£ 10,010	£ 9,614

For the period 1903 to 1907 the fall in percentage of working expenses on gross revenue was from 68.80 to 57.18 per cent., but it then gradually increased to 65.29 per cent. in 1912. The rise of the percentage of net revenue on total capital cost for the years 1903 to 1907 was from 2.53 to 4.36 per cent. For the years 1908 to 1910 it fell off, but rose to 4.45 per cent. in 1911, falling to 4.13 per cent. in 1912.

While the sinister influence of the drought of 1902 is strikingly shewn in the curves (a) by the fall in the gross and net revenue in 1902-3, (b) by the fall in the percentage of net revenue on capital cost, and (c) by the increase of working expenses on gross revenue, the rapidity of recovery is even more striking, and goes to indicate the great elasticity of the economic condition of the Commonwealth. Still more remarkable is the fact that a group of railways, necessarily constructed largely in accordance with a policy of widespread development of Australia's resources rather than as mere commercial enterprises, and costing so large a sum as £160,557,160 for construction and equipment up to the 30th June, 1912, should, nevertheless, yield so large a revenue, bringing in for the year 1911-12 a return, as already pointed out, of no less than 4.13 per cent.

(D.)—Private Railways.

1. **Total Mileage Open, 1912.**—As has been stated in a previous part of this Section (see A. 3) a number of private railway lines have from time to time been constructed in the Commonwealth. By far the greater proportion of such lines, however, has been laid down for the purpose of hauling timber, coal, or other minerals, and is not generally used for the conveyance of passengers or for public traffic; in many cases the lines are often practically unballasted and are easily removable, running through bush and forest country in connection with the timber and sugar-milling industries, and for conveying firewood for mining purposes. Many of these lines may perhaps be said to be rather of the nature of tramways than of railways. Private railways referred to herein include (a) lines open to the public for general passenger and goods traffic; and (b) branch lines from Government railways and other lines which are used for special purposes and which are of a permanent description. Other lines are referred to in the part of this Section dealing with Tramways (see § 3, *Tramways*).

The following table gives particulars of private railways in the Commonwealth open for traffic up to the 30th June, 1912. A classification of these lines according to their gauge has already been given (see A. 6).

MILEAGE OF PRIVATE RAILWAYS OPEN, 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
For general traffic ...	141	14	333	...	277	166	931
For special purposes ...	125	37	21	34	555	39	811
Total ...	266	51	354	34	832	205	1,742

2. **Classification of Private Railways.**—The subjoined statement gives particulars regarding private railways, so far as returns are available, in each State for the year 1911-12. In this statement the lines inset are sub-branches from the main branches specified.

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1911-12.

Railway Lines.	Gauge.	Length	Nature of Traffic Carried, etc.
NEW SOUTH WALES.			
1 BRANCHES FROM NORTHERN LINE, N.S.W. GOVT. RLYS.—	ft. in.	Miles.	
East Greta to Stanford-Merthyr and connections...	4 8½	24½	Coal and passengers
Hexham-Minni	4 8½	6	"
Brown's line to Richmond Vale	4 8½	11½	Coal
Three other sub-branches	4 8½	5	"
Newcastle-Wallsend Co.'s lines	4 8½	4½	"
Five sub-branches...	4 8½	4	"
Waratah Coal Co.'s line	4 8½	4½	"
Old Burwood Pit	4 8½	7½	"
Gunnedah Coal Co.'s line	4 8½	4½	"
Twelve other branches	4 8½	16	Coal, coke, ores & stone
Total ...	4 8½	88½	
2. BRANCHES FROM NORTH-COAST LINE GOVT. RAILWAYS—			
New Redhead Coal Co.'s lines, Adamstown to Burwood	4 8½	8	Coal and passengers
Extended, and Dudley lines	4 8½	6	"
Seaham Coal Co.'s lines, Cockle Creek to West Wallsend and Seaham collieries	4 8½	9	Coal
Nine other branches	4 8½	9	"
Total ...	4 8½	23	
3. BRANCHES FROM SOUTHERN LINE, N.S.W. GOVT. RLYS.—*			
Liverpool-Warwick Farm	4 8½	2	Racecourse traffic
4. BRANCHES FROM S. COAST LINE, N.S.W. GOVT. RLYS.—†			
Mount Kembla Coal Co.	4 8½	7½	Coal
Corrimal and Balgownie	4 8½	3½	"
Australian Smelting Co., Dapto	4 8½	2½	Ores
Mount Keira Coal Co., Belmore Basin	4 8½	3	Coal
Nine other branches	4 8½	14	"
Mount Pleasant Coal Co.	3 6	3½	"
Total ...	4 8½ 3 6	31½ 3½	
5. BRANCHES FROM WESTERN LINE, N.S.W. GOVT. RLYS.—			
Commonwealth Oil Corporation's line from Newnes Junction	4 8½	32	General
Eleven other branches	4 8½	6½	Coal, metal, and ores
Total ...	4 8½	38½	
6. SILVERTON TRAMWAY—			
Broken Hill and Cockburn	3 6	36	General
7. DENILIQUIN-MOAMA LINE	5 3	45	"
Total for State	4 8½ 3 6 5 3	181½ 39½ 45	

* Three other branch private lines having a total length of 24 miles have been constructed for the conveyance of minerals, but are now closed. † The Illawarra Harbour and Land Corporation's line, 6½ miles long, constructed for general traffic is not now working.

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1911-12 (Continued).

Railway Lines.	Gauge.	Length	Nature of Traffic Carried, etc.
VICTORIA.*			
1. KERANG TO KOONDRICK TRAMWAY	ft. in. 5 3	Miles. 14	General
2. ALTONA BAY RAILWAY— Williamstown racecourse and pit at Altona	5 3	2½	Sand and stone
3. TOOBORAC into bush	5 3	24	Firewood
4. TRAWALLA to WATERLOO	5 3	8	" and gravel
5. CARISBROOK to NEW HAVILLAH MINE	5 3	2½	" & mining timber
Total for State... ..	5 3	51	

* The Rosstown railway, running between Elsternwick and Oakleigh railway stations, about 5 miles in length, is not in use.

QUEENSLAND.

	ft. in.	Miles.	
1. BRANCHES FROM GREAT NORTHERN LINE, GOVT. RLYS.— Three branch lines	3 6	2½	Mineral traffic
2. BRANCHES FROM NORTH-COAST LINE, GOVT. RAILWAYS— Bundaberg to Millaquin	3 6	2	Sugar
Avondale to Invicta Mill	3 6	9	General (chiefly sugar)
3. BRANCH FROM WESTERN LINE, GOVT. RAILWAYS— Munro's tramway to Perseverance	3 6	10	Timber & farm produce
Gulland's lines to coal mines	3 6	1½	Coal
Stafford's lines to coal mines	3 6	2	"
4. BRANCHES FROM CAIRNS LINE, GOVT. RAILWAYS— Greenhill branch	2 0	4½	Sugar
Chillagoe railway, Mareeba to Mungana	3 6	103	General (chiefly coal and
Mount Garnet tramways, Lappa Jn'n to Mt. Garnet	3 6	33	" " [minerals]
Stannary Hills tramway, Boonmoo to Rocky Bluffs	2 0	21½	" " "
Mount Molloy tramway	3 6	20	" " "
5. BRANCH FROM SOUTH-COAST LINE, GOVT. RAILWAYS— Beaudesert tramway to Rathdowney, Tabooba Junction to Lamington	3 6	36½	" (chiefly timber
6. INGHAM TRAMWAY— East Ingham to Mount Fox	2 0	30½	[and dairy produce]
Lucinda to East Ingham	2 0	17	General (chiefly sugar)
7. GERALDTON TRAMWAY— Geraldton towards Herberton	2 0	20½	" (chiefly sugar)
8. MOSSMAN TRAMWAY— Port Douglas to S. Mossman and Mowbray Rivers	2 0	18	"
9. BRANCH FROM BOWEN LINE— Bowen to Proserpine	3 6	38	"
Total for State... ..	3 6	255½	
	2 0	111½	

† Including sidings.

SOUTH AUSTRALIA.

BROKEN HILL PROPRIETARY CO.'S LINE— Iron Knob to Spencer's Gulf	ft. in. 3 6	Miles. 34	Carriage of ironst'ne flux
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CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1911-12 (Continued).

Railway Lines.	Gauge.	Length	Nature of Traffic Carried, etc.
WESTERN AUSTRALIA.*			
1. MIDLAND RAILWAY— Joining Govt. lines at Midland Junction & Walkaway	3 6	277	General
2. W.A. GOLDFIELDS FIREWOOD SUPPLY CO.'S LINE— From Kurrawang into bush	3 6	72	Firewood
3. KALGOORLIE AND BOULDER FIREWOOD CO.'S LINE— Goodwood railway, from Lake Side into bush	3 6	35	"
Lancefield railway into bush	2 0	26	"
Leverton to junction Lancefield railway	2 0	4½	"
4. W.A. JARRAH SAWMILLS LINE— From Kurrup to mills and into bush	3 6	6½	Timber
5. TIMBER CORPORATION CO.'S LINE— From Greenbushes to mills and into bush	3 6	15	"
6. S.-WEST TIMBER HEWERS' CO-OP. SOCIETY'S LINE— From Collie into bush	3 6	8½	"
7. MILLAR'S KARRI AND JARRAH CO.'S LINES— Upper Darling Range railway, from Pickering Brook to Canning mills and bush	3 6	12½	"
Jarrahdale and Rockingham railway, from Mundiggin to Rockingham and bush	3 6	51	"
Yarloop railway to mills and bush	3 6	51½	"
Mornington mills rly., from Wokalup to mills & bush	3 6	24½	"
Ferguson River railway, from Dardanup to mills and into bush	3 6	32½	"
Karridale railway, to Hamelin & Flinders Ports from Karridale and into bush	3 6	58	"
Collie Mills railway, from Worsley into bush	3 6	15½	"
8. BUNNING BROS. LTD. LINES— From Lion Mill, Argyle, and Cardiff to bush	3 6	21	"
9. NORTH DANDALUP S.M. RAILWAY— To mill and bush	3 6	8	"
10. SEXTON AND DRYSDALE'S BUSH RAILWAY— From Noggerup to bush	3 6	4½	"
11. SWAN SAW MILL RAILWAY— From Lowden to mill and bush	3 6	5	"
12. W.A. TIMBER AND FIREWOOD CO. LTD. LINE— Kurramia railway, from Kalgoorlie-Kanowna railway to bush	3 6	48	Firewood
13. SONS OF GWALIA GOLD MINING CO.'S LINE— Railway into bush	1 8	18	"
14. MURCHISON FIREWOOD CO.'S LINE— Nallan wood railway, from Nallan siding to bush	3 6	24	"
15. WHIM CREEK TO BALLA RAILWAY	2 0	13½	Copper Ore
Total for State...	3 6	769½	
	2 0	44½	
	1 8	18	

* To the 31st December, 1909.

TASMANIA.

Railway Lines.	Gauge.	Length	Nature of Traffic Carried, etc.
1. EMU BAY RAILWAY CO.'S LINES— Burnie to Waratah	3 6	104	General
Guildford to Zeehan	3 6		
Rayna to Dundas	3 6		
2. MOUNT LYELL MINING AND RAILWAY CO.'S LINES— Strahan to Queenstown	3 6	22	"
Gormanston to Kelly Basin	3 6	30	"
3. SANDFLY COLLIERY CO.'S LINE— North-west Bay Co.'s jetty to mine	2 0	12	Minerals
4. HUON TIMBER CO.'S LINE*— Tasmanian Gold Mining Co.'s LINE— Beaconsfield to Beauty Point†	3 6	13	Timber
5. ZEEHAN TRAM CO.'S LINE— Emu Bay railway to British Queen	3 6	3½	Minerals and occasionally passengers
6. DUCK RIVER RAILWAY— Leesville to Parish of Williams†	2 0	2½	Minerals and occasionally passengers
7. MAGNET SILVER MINING CO.'S LINES— Magnet Junction to Magnet	3 6	8	Chiefly timber
	2 0	10	Minerals and passengers
Total for State...	3 6	180½	
	2 0	24½	

* Terminal points not fixed in May, 1908, as extension is still under construction. † Also branchlines as follows:—Electric railway, 1½ miles long, to reduction works, 2 ft. gauge; surface railways, horse, ½ mile long, 2 ft. gauge. ‡ Extensions under construction.

3. New South Wales.—In this State the mileage of private railways open to the public for general traffic at the end of 1911 was 141, and of lines used for special purposes, 125 miles. Most of these lines were constructed primarily for the purpose of conveying coal from the mines to the Government railway systems. Particulars for the year 1911 of the operations of lines open for general traffic are given, so far as available, in the table on page 733.

(i.) *Private Railways Open for General Traffic.* The most important of the lines open for general traffic are as follows:—(a) *The Deniliquin-Moama Line.* In 1874 permission was granted by the New South Wales Government to a private company to construct a line forty-five miles long from Deniliquin, in the Riverina district, to Moama, connecting with the Victorian Railway system at the Murray Bridge, near Echuca. The line was opened in 1876, the land required being granted by the Government. (b) *The Cockburn-Broken Hill Line.* This line is owned by the Silverton Tramway Company. It was opened in 1888, and connects Broken Hill with the South Australian railway system, having a total length of 36 miles. (c) *East Greta Line.* This line, belonging to the East Greta Coal Mining Company, runs from East Greta Junction, on the Northern line of the Government railways, to Stanford Merthyr, a distance of 8 miles. (d) *The New Redhead Coal Company's Railway.* The lines owned by this company branch from the Northern line of the Government railways, and run from Adamstown to Burwood Extended Colliery, and from Adamstown to Dudley Colliery, a total distance of 8 miles. The lines are worked by the Railway Department, coal waggons being supplied in part by the coal companies using the line. The colliery companies using the line pay a way-leave for right to run their coal over the line, and the Railway Commissioners allow the New Redhead Company a proportion of the revenue from the passenger and goods traffic. (e) *The Seaham Coal Company's Railways.* This line runs from Cockle Creek to West Wallsend and Seaham Collieries, and has a total length of 6 miles. (f) *Hexham-Minmi Railway.* This line branches from the Northern line of the Government railways and has a length of 6 miles. Further particulars are not available. (g) *The Commonwealth Oil Corporation's Railway.* This line runs from Newnes Junction on the Great Western line of the Government railways to the company's refinery, a distance of 32 miles. The Shay geared type of locomotive is in use on this line. (h) *The Warwick Farm Line* is a short line, three-quarters of a mile in length, connecting the Government line near Liverpool with the Warwick Farm Racecourse, Government rolling-stock is used.

In addition to the lines referred to above, legislative sanction was obtained in 1890 for the construction of a private line from the flux quarries at Tarrawingee to the Broken Hill line, a distance of 40 miles. The line was purchased by the Government in 1901, and is operated by the Silverton Tramway Company under lease from the Chief Commissioner, who pays the working expenses and receives the ordinary earnings and one-half the net receipts on special and holiday traffic.

4. Victoria.—In Victoria the only private railway open for general traffic is the Kerang-Koondrook tramway, opened in 1889. The cost of construction of this line to the end of September, 1912, was £40,110, paid out of a loan advanced by the Victorian Government. The total length is $14\frac{1}{2}$ miles. The line is at present controlled by the Kerang Shire Council, but proposals have recently been made for its transfer to the Railway Department.

A line running from Elsternwick to Oakleigh, a distance of about 5 miles, has been constructed by a private company, but is not in use.

5. Queensland.—In this State private railways open for general traffic may be grouped under two heads:—(i.) Lines constructed primarily for mining purposes, and (ii.) Shire tramways.

(i.) *Mining Railways.* (a) *The Chillagoe Railway.* The most important of these is the Chillagoe railway, constructed under the Mareeba to Chillagoe Railway Act 1897, and opened in 1901. This line runs from Mareeba, on the Cairns railway, to Mungana,

a distance of 103 miles. (b) *The Stannary Hills Line*. This line branches from the Chillagoe railway at Boonmoo and runs to Rocky Bluff, *via* Stannary Hills, a total distance of 21 miles. The gradients on this line, which has a gauge of 2 feet, range as high as 1 in 27, while the radius of some of the curves is as low as $1\frac{1}{4}$ chains. An additional length of 8 miles has been surveyed with a view to extending the line. (c) *The Mount Garnet Railway*. This line also branches from the Chillagoe railway at Lappa Junction and runs for a distance of 33 miles, as far as Mount Garnet.

(ii.) *Shire Tramways*. Under Part XV. of the Local Authorities Act of 1902 provision is made whereby not less than one-third of the ratepayers in any district may petition the local authority to apply to the Governor for the constitution of a tramway area. The Governor may define the area and may also approve of the plans and specifications of the proposed tramway. The amount which may be advanced by the Government for the construction or purchase of a tramway may not exceed a sum equal to £3000 for every mile of its length. As regards repayment of loans, no sum need be paid during the first three years, but after the expiration of that period the principal and interest must be repaid by half-yearly instalments on the basis provided for by the "Local Works Loans Act, 1880 to 1899." For the purpose of raising the money to pay these instalments the local authority may levy a rate upon all ratable property within the tramway area. The money required for the tramway may be raised by the local authorities by the issue of debentures.

6. **South Australia.**—In this State there are no private railways open for general traffic. The only private line is that owned by the Broken Hill Proprietary Company, running from Iron Knob to the seaboard near the head of Spencer's Gulf, a distance of 34 miles. The line is utilised for the carriage of flux for use in connection with the smelting works at Port Pirie.

7. **Western Australia.**—Owing to the Government's past difficulty in constructing lines urgently required for the development of the country, private enterprise was encouraged to undertake the work of construction on the land-grant principle, and two trunk lines were thus constructed. The greater part of the private lines now open, however, have been constructed in connection with the timber industry. (i.) *The Midland Railway*. This line is 277 miles in length, and runs from the Midland Junction, ten miles from Perth, to Walkaway, where it joins the Government line running to Geraldton. It was constructed under a concession of 12,000 acres of land per mile of line constructed, to be selected along the entire route of the railway. (ii.) *The Great Southern Railway*. This line, which was built by private enterprise under the land-grant system, is 242 miles in length, and was acquired by the Government by purchase on the 1st January, 1897. The total price paid, with all the interests of the private company and of the original concessionaire, was £1,100,000, which was divided by the Government for book-keeping purposes into £300,000 for the land and £800,000 for the railway. (iii.) *Millar's Karri and Jarrah Company's Lines*. These lines have mostly been built under special timber concessions and leases. There were, at latest date available, in all seven lines situate in various parts of the State extending into the bush, whence logs are brought to the mills. The total length of these lines was approximately 245 miles. (iv.) *Other Lines*. There are also a number of other lines in various parts of the State used chiefly in connection with the timber industry. These are specified in the tabular statement on page 730.

8. **Tasmania.**—In this State there are three private lines open for general traffic. They are all situated in the western part of the island.

(i.) *The Emu Bay Railway Company*. The lines owned by this company run from Burnie to Waratah, from Guildford to Zeehan, and from Rayna to Dundas, and have a total length of 104 miles.

(ii.) *The Mount Lyell Mining and Railway Company*. The Mount Lyell railway runs from Regatta Point, Strahan, to Queenstown, and the North Mount Lyell line from Kelly Basin to Linda. The former line, 22 miles in length, was constructed in 1895-6,

while the latter line, 30 miles long, was taken over from the North Mount Lyell Copper Company on the amalgamation of the two companies in 1903. The line from Kelly Basin to Linda is now run only intermittently.

(iii.) *The Magnet Silver Mining Company's Railway.* This line runs from Magnet Junction, near Waratah, on the Emu Bay Company's line to Magnet, a distance of 10 miles.

9. **Operations of Private Railways, 1911.**—The tabular statement given below shews particulars, so far as returns are available, for the year 1911 of all private railways open to the public for general traffic in the Commonwealth:—

PARTICULARS OF PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC, 1911.

Line.	Miles Open.	Capital Cost.	Gross Revenue.	Expenses.		Train Miles.	Passenger Journeys.	Tons of Goods, etc.	No. of Employees.	Rolling Stock.		
				Working.	Interest etc.					Locos.	Coaches.	Wagons.
	No.	£	£	£	£	No.	No. '000.	Tons '000.	No.	No.	No.	No.
NEW SOUTH WALES.												
Deniliquin-Moama	45	162,672	20,439	11,057	655	39,148	17	39	51	4	6	63
Silverton Tramway	36	438,453	193,583	68,612	...	161,164	56	1,056	270	16	17	617
East Greta Railway	8	152,202	45,769	30,106	7,610	323,712	688	41	211	14	32	29
Seaham Colliery Co.	6	16,000	736	b	b	6,300	10	44	9	2	3	...
New Redhead Co. ...	8	90,000	3,717	1,035	2,913	b	b	b	e	e	e	e
Hexham-Minmi	6	b	1,078	755	...	9,683	13	2	9	2	5	...
C'wlth. Oil Corp'n	32	203,272	2,727	9,734	10,961	38,620	5	31	60	5	2	34
Total (a)	141	1082,599	268,049	121,299	22,139	578,627	789	1,213	618	43	65	743
VICTORIA.												
Kerang-Koondrook	14	40,110	5,230	3,015	1,253	19,000	14	b	10	2	2	6
QUEENSLAND.												
Chillagoe Railway	103	420,276	67,563	19,956	...	103,412	29	97	155	8	2	158
Stannary Hills	21	65,320	6,764	6,282	...	31,943	4	41	8	3	2	76
Mount Garnet	33	100,000	2,389	2,901	...	11,518	2	3	12	1	1	4
Invicta Mill	9	16,015	496	...	367	816	b	b	b	e	e	e
Beaudesert	36c	98,000	9,419	4,673	2,905	30,400	16	15	30	1	3	e
Douglas-Mossman	18	43,274	4,493	2,858	1,452	8,000	2	b	b	b	1	b
E. Ingham-Mt. Fox	30f	55,306	1,571	d 490	2,299	b	2	b	b	b	1	b
Lucinda-E. Ingham	17	b	1,026	b	b	b	b	b	b	b	2	b
Bowen-Froserspine	38g	103,682	5,549	3,957	2,037	12,245	6	b	10	e	e	e
Geraldton Tramway	20	49,938	f 3,396	2,604	1,959	16,983	5	19	15	2	2	21
Mt. Molloy	20	45,813	2,319	3,293	b	9,924	2	3	10	e	e	7
Total (a)	346	997,624	104,987	46,984	11,019	225,266	70	178	240	15	14	266
WESTERN AUSTRALIA.												
Midland Railway	277	126,5874	129,394	91,509	b	534,237	71	g 74	360	11	16	314
TASMANIA.												
Emu Bay Railway	104	611,125	60,761	31,550	19,721	141,435	32	71	118	10	6	152
Mt. Lyell Railway	92	216,086	31,489	21,694	...	54,827	32	121	83	7	7	197
Nth. Mt. Lyell Rly.	30	316,638	2,976	4,819	...	7,145	6	11	18	4	3	56
Magnet Railway	10	18,750	429	1,727	...	7,280	1	...	8	2	1	4
Total (a)	166	1162,599	95,655	59,790	19,721	210,687	71	203	227	23	17	339
Total for Cwlth. (a)	944	4528,806	603,315	322,597	54,137	1567,817	1,015	1,693	1,455	94	114	1,668

(a) Incomplete. (b) Not available. (c) Including sidings. (d) Exclusive of one guard's salary. (e) Government rolling-stock used. (f) Exclusive of £1471 received from special rate levy on land. (g) Carried also 227,000 head of live stock.

§ 3. Tramways.

1. **General.**—Tramway systems are in operation in all the States of the Commonwealth, and in recent years considerable progress has been made in the adoption of electrical traction, the benefit of which is now enjoyed by a number of the principal towns of the Commonwealth.

There are also in many parts of Australia private tramway lines which are used for special purposes, usually in connection with the timber, mining, or milling industries. Though efforts have been made to collect particulars of these lines, the returns are generally too incomplete for publication.

(i.) *Total Mileage Open and Classification of Lines.* The following table shews the total mileage of tramway lines open for general passenger traffic in each State and in the Commonwealth at the end of the year 1911-12, classified (a) according to the motive power utilised and (b) according to the nature of the authority by which the lines are controlled:—

TRAMWAYS.—CLASSIFICATIONS OF MILEAGE OPEN FOR PASSENGER TRAFFIC, 1911-2.

Nature of Motive Power and Controlling Authority.		N.S. Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tas.	C'wealth.
ACCORDING TO MOTIVE POWER:								
		Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Electric	...	133	52	34	48	53	15	335
Steam	...	67	1	...	...	...	...	68
Cable	...	...	46	...	...	...	...	46
Horse	...	...	13	...	24	28	...	65
Total	...	200	112	34	72	81	15	514
ACCORDING TO CONTROLLING AUTHORITY.								
Government	...	196	5	...	18	28	...	247
Municipal	...	...	15	...	48	12	6	81
Private	...	4	92	34	6	41	9	186
Total	...	200	112	34	72	81	15	514

2. **New South Wales.**—In this State the tramways, with but few comparatively important exceptions, are the property of the Government, and are under the control of the Railway Commissioners.

(i.) *Government Tramways.* In Sydney and suburbs the Government tramways are divided into distinct systems. There were in June, 1912, seven such systems in operation within the metropolitan area, the most important being the city and suburban lines, 98 miles in length ($168\frac{1}{2}$ miles single track); the North Shore line, $18\frac{1}{2}$ miles in length ($26\frac{1}{2}$ miles single track); and the Ashfield to Mortlake line, $8\frac{1}{2}$ miles in length. All of these systems are now operated by electricity. There are two systems on which the motive power used is steam, namely—(a) from Kogarah to Sans Souci, $5\frac{1}{2}$ miles in length, and (b) from Arncliffe to Bexley, $2\frac{1}{2}$ miles long. The line from Ashfield to Mortlake ($8\frac{1}{2}$ miles) has been converted from steam to electric traction (February

1912). There are also Government steam tramways in operation at Newcastle, Broken Hill, Parramatta, from East to West Maitland, and from Sutherland to Cronulla. The gauge of line on all the Government tramways is 4 feet 8½ inches.

(a) *Sydney Tramways.* In the early sixties a horse tramway, 1½ miles long, was constructed in Sydney. Owing to the rails being laid higher than the road surface, the inconvenience thus caused to other traffic necessitated its removal, and it was not until September, 1879, that the first steam tramway was opened, running from Bridge-street to Hay-street *via* Hunter-street. In the following few years these steam tramways were considerably extended. The electric system was not introduced into the city until the close of the year 1899, though it had at that time been in operation for some years in North Sydney. The tramways in the heart of the city, running along King-street to the suburb of Woollahra, as well as those in North Sydney, were originally worked by underground cables, and have since been converted into electric lines on the overhead trolley system. In December, 1899, the electric tramway, extending from the Circular Quay along George-street to the Redfern Station, and thence to the densely-populated district of Pyrmont, was opened for traffic. This tramway is a double track, and is 3½ miles in length. Single lines have been constructed along Castlereagh and Pitt streets, with the object of relieving the traffic along George-street. The whole of the steam tramways in Sydney and suburbs, with the exception of the Kogarah-Sans Souci, and the Arncliffe-Bexley, have now been converted into electric lines, and provision for the extra power required for the electrification of the former of these lines has been made at the central power station. New sub-stations have been erected at Darlinghurst, Leichhardt and Burwood.

(b) *Other Tramway Systems.* In Newcastle the first section of the tramways, from Perkins-street to Plattsburg, was opened in 1887; the total length open on the 30th June, 1912, was 28 miles. At Broken Hill and Parramatta the first sections of the tramways were opened in 1902. On the 30th June, 1912, the mileage open at Broken Hill amounted to 9, and at Parramatta to 6½ miles. The line from East to West Maitland, 4½ miles long, was opened in February, 1909. There are also three short lengths of tramways in New South Wales run by private companies. Further particulars are given below.

(c) *Particulars of all Government Tramways.* The following table shews the total length, the capital cost, the gross revenue, working expenses, and net earnings, and the percentages of working expenses on gross revenue, and of net earnings on capital cost, for the financial years 1901-2 and 1907-12:—

**NEW SOUTH WALES.—PARTICULARS OF WORKING OF GOVERNMENT TRAMWAYS,
1901-2 and 1907-12.**

Year ended the 30th June.	Total Length of Lines Open.	Capital Expended on Lines Open.	Gross Revenue.	Working Expenses.	Net Earnings.	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.
	Miles.	£	£	£	£	per cent.	per cent.
1901-2	104	2,829,363	631,757	541,984	89,773	85.79	3.19
1907-8	132½	3,732,991	1,011,994	809,065	202,929	79.95	5.44
1908-9	151½	4,252,731	1,097,565	875,560	222,005	79.77	5.61
1909-10	165½	4,668,797*	1,185,568	983,587	201,981	82.96	4.33
1910-11	190	5,121,586*	1,365,631	1,143,949	221,682	83.77	4.33
1911-12	195½	5,664,324*	1,581,393	1,331,413	249,980	84.19	4.41

* £47,455 of this sum has been paid from the Consolidated Revenue, and no interest is payable thereon.

The net result, after providing for all working expenses and £192,284 for interest on the capital invested, was a surplus of £57,696 in 1911-12, as compared with £47,627 in the preceding year. During the year 1911-12, 266,789,546 passengers were carried without any accident resulting in loss of life to any of the passengers.

(d) *Particulars of Different Systems of Government Tramways.* In the subjoined statement particulars are given of the working of the electric and steam tramways in Sydney, and of the other Government tramways at Parramatta, Sutherland, Newcastle, Maitland, and Broken Hill.

**NEW SOUTH WALES.—PARTICULARS OF THE WORKING OF THE VARIOUS
GOVERNMENT TRAMWAYS, 1911-12.**

Line.	Length	Total Cost.	Gross Revenue.	Working Expenses.	Interest.	Profit or Loss.*
	Miles.	£	£	£	£	£
Sydney and Suburban—						
Electric	131½	5,153,321	1,460,625	1,209,321	174,594	+76,710
Steam	8½	38,622	7,415	9,305	1,389	— 3,279
Total... ..	140	5,191,943	1,468,040	1,218,626	175,983	+73,431
Parramatta Steam	6½	37,247	5,970	7,319	1,340	— 2,689
Sutherland to Cronulla „	7½	43,140	8,674	5,571	1,453	+ 1,650
Newcastle „	28	276,201	72,324	71,488	9,386	— 3,550
East to West Maitland „	4½	38,110	5,338	5,307	1,371	— 1,340
Broken Hill „	9	77,683	21,047	23,102	2,751	— 4,806
Total... ..	195½	5,664,324	1,581,393	1,331,413	192,284	+57,696

* The positive sign indicates a profit, the negative a loss.

The total capital cost shewn in the preceding table was made up as follows :—

**CAPITAL COST OF NEW SOUTH WALES GOVERNMENT TRAMWAYS AS AT
30th JUNE, 1912.**

Permanent Way.	Rolling Stock.	Power-house, Sub-stations, and Plant.	Machinery.	Workshops.	Furniture.	Total.
£3,187,371	£1,250,524	£989,653	£68,261	£166,123	£2,392	£5,664,324

The average cost per mile open was £16,292 for permanent way and £12,661 for all other charges, making a total of £28,952 per mile.

During the year 1911-12, four new extensions, amounting in all to a length of 16 miles, were opened for traffic. On the 30th June, 1912, eight extensions, having a total length of 11 miles, were under construction, and up to the same date four additional extensions, amounting to about 3½ miles, had been authorised for construction.

(e) *Sydney Electric Tramways.* The total route mileage of the city and suburban lines is 98, of the North Shore line 18½ miles, of the Ashfield-Mortlake line 8½ miles, and of the Manly-The Spit line 6½ miles, making the total length of the electric tramways in Sydney 131½ miles. The current for the operation of these tramways is generated at the power-house at Ultimo, which has been erected at a total cost of £989,653, including the cost of the sub-stations and plant. The current generated at the power-house is partly continuous and partly alternating, and is used both for lighting and traction purposes. The standard voltage of the continuous current is 600; the alternating current is transmitted by means of high-tension cables to sub-stations, where it is converted to continuous current at the standard voltage. The total output of the power-house, for both lighting and traction purposes, during the year 1911-12, was 77,534,279 kilowatt-hours, of which the direct-current supply was 16,160,139, and the alternating current 61,374,140 kilowatt-hours. The following table gives particulars of the working of the electric tramways for the financial years 1901-2 and 1907-12 :—

**NEW SOUTH WALES.—PARTICULARS OF SYDNEY ELECTRIC TRAMWAYS,
1901-2 and 1907-12.**

Year ended 30th June.	Mileage Open for Traffic (Track).	Total Cost of Construction and Equipment.	Output of Power-house for Traction Purposes.	Tram Miles Run.	Passengers Carried.
	Miles.	£	Kilowatt-hours '000	No. '000.	No. '000.
1902	52	1,285,014	15,472	6,175	63,517
1908	146½	3,288,480	37,422	16,517	159,723
1909	169½	3,756,198	42,299	17,813	173,733
1910	184½	4,235,170	45,500	19,394	187,574
1911	201½	4,585,240	61,163	21,120	214,975
1912	223	5,153,321	70,920	23,016	250,786

Year ended 30th June.	Gross Revenue.	Working Expenses.	Net Revenue.	Number of Cars in Use.	Number of Persons Employed.
	£	£	£		
1902	340,742	257,557	83,185	436	2,855
1908	925,224	735,442	189,782	775	4,714
1909	1,009,498	785,404†	224,094	906	5,514
1910	1,092,582	888,415	204,167	939	6,065
1911	1,256,672	1,033,229	223,443	985	6,667
1912	1,460,625	1,209,321	251,304	1,048	8,138

† Including £50,500 written off for depreciation, etc.

The net revenue on capital invested was 4.89 per cent. in 1911-12 as against 4.87 per cent. in the preceding year.

(ii.) *Private Tramways.* There are two private tramway lines in New South Wales open for general traffic. (a) There is an electric tramway running from Rockdale to Brighton-le-Sands, a distance of one and a-quarter miles with a gauge of 4 ft. 8½ in. This line was originally opened as a steam tramway in 1885, but was subsequently converted into electric. The total cost to the end of 1911 was £13,800. During that year the number of tram-miles run was 37,000. (b) A private steam tramway passes through the township of Parramatta. Commencing at the park gates, it runs as far as the Duck River, a distance of 3½ miles, where it connects with the Parramatta River steamers, conveying passengers and goods to and from Sydney. This line, the gauge of which is 4 ft. 8½ in., was opened for traffic in 1883. In 1911 the number of tram miles run was about 17,936, and the number of passengers conveyed about 96,357.

Particulars regarding private tramways used for special purposes are not available.

(iii.) *Sydney Harbour Ferries.* As the ferry services on the waters of Port-Jackson are mainly subsidiary to the suburban railway and tramway systems, it has been thought advisable to include them here rather than under shipping. Returns for the year 1911 were received from four companies, and shew that these companies had 61 boats in commission, which were licensed to carry a total of 39,024 passengers, or an average of 639 per boat and per trip. The total number of passengers carried during the year is stated as 29,700,000, an average of 81,370 per day. In addition to the ordinary passenger traffic there are two lines providing for vehicular traffic, which afford the only rapid means of transit between the city and the northern suburbs. The four companies employed during the year a total of 907 persons. The gross revenue during 1911 amounted to £274,624, and the expenditure to £173,259, thus giving

a net revenue of £101,365. The services are well managed, and the boats constructed during recent years—double-ended screwboats—are claimed to be superior in size and equipment to boats employed on similar service in any part of the world.

3. *Victoria.*—In Melbourne there is a number of tramway systems carried on under the control of various authorities, the most important being the cable system worked by the Melbourne Tramway and Omnibus Company. There are also three lines of electric tramways, one running from St. Kilda to Brighton, a distance of five and one-eighth miles, belonging to the Government, and under the control of the Railway Commissioners; one from Flemington Bridge to the Saltwater River and Keilor Road, a distance of seven and a-quarter miles, run by a private company; and one connecting the southern suburbs of Prahran, Malvern, Caulfield and St. Kilda. This system has a track mileage of $13\frac{3}{4}$ miles and is controlled by a joint municipal trust. There is also a private cable tramway, two and a-quarter miles in length, between Clifton Hill and Preston. There are also two tramways worked by horses—one, seven miles in length, running from Sandringham to Cheltenham *via* Beaumaris, and privately owned, the other, one and a-half miles long, from Brunswick to Coburg, and owned by the Coburg municipality, while three similar services are worked by the Melbourne Tramway and Omnibus Company, viz., Victoria Bridge to Kew, Richmond Bridge to Hawthorn, and the Zoological Gardens lines. It is intended to electrify the Brunswick-Coburg line at an early date. There is a short steam tramway, about one mile long, at Sorrento, and there are also systems of electric tramways at Ballarat and Bendigo, constructed and run by a private company. A number of tramways has been constructed for special purposes in various parts of the State under the provisions of the Tramway Act 1890. The work of constructing electric tramways at Geelong was commenced in January, 1911, and the line was opened for traffic in January, 1912. This system has a length of five and a quarter miles of single track, the gauge being 4 ft. $8\frac{1}{2}$ in.

(i.) *Melbourne Cable Tramways.* The Melbourne Omnibus Company began its services by the initiation of omnibus services in 1869, and in 1878 the company changed its name to the Melbourne Tramway and Omnibus Company, with a view to the introduction of a tramway system in the city and suburbs of Melbourne. It was not, however, until the year 1883, when the Melbourne Tramway and Omnibus Company's Act was passed, that the necessary authority was given by Parliament for that purpose. Under this Act the company was empowered to construct tramways in the streets of Melbourne and suburbs, with the consent of the municipalities interested, who had the option of electing to construct the tramways themselves. All the municipalities decided to exercise the option conferred upon them, and, according to the provisions of the Act, a Tramways Trust was formed. This body, which is composed of seven members from the Melbourne City Council and one member each from the councils of eleven of the surrounding municipalities, received full power to construct tramways, and to borrow money for that purpose, secured on the municipal properties and revenues and on the tramways themselves. The Trust raised sufficient funds to pay for the construction of the tramway-tracks and the engine-houses from which the cables are worked. It was required by the original Act, as amended in 1892, to complete the tramways by the end of the year 1893, and to grant a thirty-two years' lease of the tramways to the company, dating from the 1st July, 1884—when the liability for interest on the loans commenced—and expiring on the 1st July, 1916. The company is required to find sufficient capital to build the rolling-stock and to equip the lines and engine-houses with all necessary working requisites. The company pays to the Trust annually the interest due upon the loans raised, and also a sufficient sum as a sinking or redemption fund, to repay by its accumulation the principal of the loans raised by the Trust, and at the expiration of the lease must hand back the lines in good working order to the Trust. The expenses of the Trust were paid out of the loan up to the end of the year 1903, but since that date have been paid by the company to an amount not exceeding £1000 per

annum, the municipalities being liable for the remainder. The total amount the Trust was empowered to borrow was £1,650,000, which has been raised in London by means of debentures bearing interest at $4\frac{1}{2}$ per cent. The premiums received amounted to £55,794, making a total of £1,705,794. This amount had been expended by the end of the year 1893, when further loan expenditure ceased. The first line—that to Richmond—was opened to traffic in November, 1885, and the work being rapidly pushed on, the others were opened at short intervals, and the whole system was completed in 1891. The complete system consists of forty-three and a half miles of double-track cable lines, using constantly over ninety miles of wire rope, and four and a half miles of double-track horse lines. The gauge of track is 4 feet $8\frac{1}{2}$ inches.

(a) *Particulars of Working.* The subjoined statement shews the tram mileage, the number of passengers carried, and the revenue and expenditure for the years 1901-2 and 1908 to 1912:—

MELBOURNE CABLE TRAMWAYS—PARTICULARS OF WORKING, 1901-2 and 1908 to 1912.

Year ended the 30th June.	Tram Mileage.	Number of Passengers Carried.	Revenue.			Working Expenses.			
			Traffic Rec'pts.	Other.*	Total.	Wages.	Repairs & Maintenance.	Other.*	Total.
	No.	No.	£	£	£	£	£	£	£
1902	9,226,883	47,261,572	454,683	20,152	474,835	125,596	68,689	75,269	269,554
1908	9,810,808	63,954,512	545,269	40,561	585,830	153,040	64,993	60,606	278,639
1909	9,856,345	66,522,463	565,601	43,059	608,660	162,093	69,681	64,516	296,290
1910	10,010,975	68,695,853	581,390	45,307	626,697	162,956	78,022	63,540	304,518
1911	10,636,440	76,295,825	644,187	40,140	684,327	182,845	77,319	60,620	320,784
1912	11,313,212	84,926,712	715,524	45,268	760,792	205,883	76,040	61,996	343,919

* Including amounts on account of omnibus lines.

It may be noted that the "Wages" item in the above table does not represent all that is paid in wages by the company, as a considerable portion is merged in the item "Repairs and maintenance." The figures under working expenses classed as "Other" comprise feed, fuel, licenses, rates, insurance, law costs, stationery and office expenses, salaries of staff, and directors' and auditors' fees.

(ii.) *Electric Tramways.* There are in Melbourne three electric tramway systems, namely (a) the St. Kilda-Brighton line, (b) the North Melbourne tramways, and (c) the Prahran-Malvern system.

(a) *The St. Kilda-Brighton Line.* Under the St. Kilda and Brighton Electric Street Railways Act 1904 the Board* of Land and Works was authorised to construct a tramway from St. Kilda to Brighton. The amount of interest payable on the cost of the land acquired for the tramway was guaranteed by the municipalities of St. Kilda and Brighton for a period of twenty years, and authority was given by the Act to the municipalities to levy either a general or special rate not exceeding one shilling in the pound for the purpose of paying the guarantee. The profit, if any, during the first twenty years is to be set off in reduction of the guarantee. The line was opened for traffic in May, 1906, and the extension to Brighton Beach was opened in the following year. A proposal has been made to extend the line along the foreshore as far as Mordialloc. The capital cost to the 30th June, 1912, exclusive of rolling-stock, was £44,197, and of rolling-stock was £16,893, making a total of £60,590. The gauge of track is 5 ft. 3 in. The subjoined statement gives particulars of the working of this line for the financial years ended the 30th June, 1907 to 1912:—

ST. KILDA-BRIGHTON ELECTRIC STREET TRAMWAY, 1907 to 1912.

Year ended 30th June.	Mileage Open.	Capital Cost.	Car Mileage.	Passengers Carried.	Gross Revenue.	Working Expenses.	Interest.	Net Profit or Loss.†
		£			£	£	£	£
1907	5.13	52,939	303,777	1,030,242	9,590	17,392*	1,980	—9,782
1908	5.13	57,523	335,007	1,146,484	10,374	14,299†	2,140	—6,065
1909	5.13	58,054	338,214	1,265,492	10,941	9,075	2,038	— 172
1910	5.13	58,612	340,254	1,361,925	11,885	9,860	2,092	— 67
1911	5.13	59,007	346,849	1,410,907	12,852	9,819	2,107	+ 926
1912	5.13	60,590	367,306	1,674,918	15,012	13,283	2,078	— 349

* Including an amount of £941 for replacement of rolling stock, car-shed and equipment destroyed by fire. † Including an amount of £311 for replacement of rolling-stock, etc., caused by fire. ‡ Profit is indicated by +, Loss by —.

The average fare paid per passenger was 2.13 pence in 1911-12 as against 2.17 pence in 1910-11. The gross revenue in 1911-12 was 9.81 pence per passenger car mile and £2926 per mile of track open. In the same year the percentage of working expenses on gross revenue was 88.5 as against 76.4 in the preceding year.

(b) *The North Melbourne Tramways*, extending through the northern suburbs to the Saltwater River and to Keilor Road, were constructed by a private company, and were opened for traffic towards the end of the year 1906. The route mileage for year ended 30th September, 1912, was $7\frac{1}{2}$ miles, the gauge of line being 4 feet $8\frac{1}{2}$ inches. The number of passengers carried during the same period was 2,405,478.

(c) *The Prahran-Malvern Tramway*. This line has been constructed under the control of a trust, which consists of five members appointed from the councils of Prahran, Malvern, St. Kilda, and Caulfield. The total track mileage (including double track 4 miles) is $13\frac{3}{4}$ miles, the total capital cost being £182,560. The gauge of the track is 4 ft. $8\frac{1}{2}$ in. The current is supplied by the Melbourne Electric Supply Company Limited at a price varying according to the consumption of current and the price of fuel. Any surplus revenue, after providing for operating expenses, interest, sinking fund, and renewal reserve, is to be paid to the municipal councils interested in proportion to the car mileage run in their respective districts. The lines were opened for traffic on 31st May, 1910. During the year ended 30th September, 1912, the current used for traction purposes was 1,039,049 kilowatt-hours, and the number of tram miles run was approximately 705,551, the number of passengers carried 5,825,378, the gross revenue £38,876, and the working expenses (excluding interest and renewals reserve) £24,719. The number of cars in use was 26, and the number of persons employed 140. An additional 25 miles of track is in course of construction, linking up the suburbs of Kew, Hawthorn, Caulfield, and St. Kilda with the existing system.

(d) *The Ballarat and Bendigo Electric Tramways* are under the control of a private company, and run along the main streets and to and from the outlying suburbs of the two cities. The total length of lines open for traffic is 22 miles, the gauge being 4 ft. $8\frac{1}{2}$ in. Over 5 million passengers were carried during 1911, the gross revenue being £47,817, and the working expenses £31,525.

(e) *The Geelong Electric Tramways*. This line, which is privately owned, was opened for traffic in January, 1912, and up to the 31st August of that year the cost of construction and equipment was £37,275. The car mileage was for the same period 83,971 miles, and the number of passengers carried 421,779.

(f) *Particulars of Working of all Electric Tramways.* The following table gives particulars of the working of all electric tramways in Victoria for each year from 1907 to 1912 inclusive:—

VICTORIA.—PARTICULARS OF WORKING OF ELECTRIC TRAMWAYS, 1907 to 1912.

Year.	Mileage Open for Traffic.	Total Cost of Construc- tion and Equipment.	Current Generated for Traction Purposes at Central Stations.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	Number of Cars in Use.	Number of Employees.
	Miles.	£	Kilowatt-hrs. (000 omitted.)	No. (000 omitted.)	No. (000 omitted.)	£	£	No.	No.
1907	34	222,486*	1,790	1,793	7,037	48,554*	34,522*	78	379
1908	34½	272,180*	1,562*	1,963	7,519	69,296	55,740	95	338
1909	34½	290,815	2,185	1,904	7,497	66,148	50,820	95	312
1910†	34½	275,458*	2,314	1,930	7,889	54,727*	40,087*	97	317
1911	43½	406,815†	2,998	2,376	12,198	84,545†	58,562†	117	408
1912	52	497,100†	3,504	2,703	15,343	106,478†	73,436†	119	501

* Incomplete.

† Exclusive of Prahran-Malvern Tramway, which was opened for traffic on 31st May, 1910. ‡ Exclusive of North Melbourne Tramway.

(iii.) *Private Tramways for Special Purposes.* There are in Victoria a number of tramways used for special purposes, chiefly in connection with the timber, mining, and milling industries. These lines have been constructed either under authority of the Department of Public Works, pursuant to Section 36 of the Tramway Act 1890, or under leases or licenses issued by the Department of Lands and Survey, pursuant to Sections 144 and 145 of the Land Act 1901. Particulars of these lines are too incomplete for publication.

4. **Queensland.**—In this State there is a system of electric tramways running through the streets of the city and suburbs of Brisbane and controlled by a private company which has its head office in London. The total length of the Brisbane system was thirty four and one-third miles at the end of the year 1912. There is also a number of tramways, having a total length of about 640 miles, run in connection with sugar mills. Particulars of Shire tramways have been given in the part of this section dealing with private railways (see p. 732).

(i.) *Brisbane Electric Tramways.* These tramways are run on the overhead trolley system, the voltage of the line current being 550. The total cost of construction and equipment to the end of the year 1909 was approximately £1,250,000, the gauge of line being 4 ft. 8½ in. The following table gives particulars of these tramways for the calendar years 1901 and 1908-12.

QUEENSLAND—BRISBANE ELECTRIC TRAMWAYS, PARTICULARS OF WORKING, 1901 and 1908-12.

Year.	Mileage Open for Traffic.	Current Generated.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	Number of Persons Employed
	Miles.	Kilowatt-hrs.	No.	No.	£	£	No.	No.
1901...	21	3,192,955	2,756,443	16,183,801	111,483	64,710	79	375
1908...	30½	4,915,202	3,367,972	27,221,466	177,567	*	107	619
1909...	30½	5,099,663	3,321,803	29,732,338	192,371	*	*	614
1910...	30½	5,441,032	3,524,036	32,419,276	214,265	*	119	654
1911...	34½	*	3,671,963	36,443,222	243,344	*	128	736
1912...	34½	5,798,622	3,508,410	36,375,652	243,668	*	128	762

* Not available.

(ii.) *Sugar-Mill Tramways.* There is a number of tramways in various parts of Queensland used in connection with the sugar-milling industry, chiefly for the purpose of hauling cane to the mills. Some of these lines are of a permanent nature, running through sugar-cane plantations, while others are portable lines running to various farms.

5. **South Australia.**—Up to the year 1906 there was a number of horse tramways in the principal streets of Adelaide and suburbs run by various private companies. Power to acquire part of these lines, with a view to their electrification, was given to the Adelaide Corporation by the Municipal Tramways Trust Act 1906. In accordance with the provisions of the Act, a Trust consisting of eight members, of whom two were nominated by the Governor, two elected by the City Corporation, and two each by the Suburban Corporations and the District Councils, was formed in 1907, and a length of forty-nine route miles of horse traction tramways was purchased from the private companies at a cost of £283,357. On the 9th March, 1909, the electric car system was inaugurated on the Kensington route. At the end of July, 1912, a length of 48 route miles had been electrified and opened for traffic, the corresponding length of track opened being 85 miles. The power house is located at Port Adelaide, nine miles from the city. It is equipped with three 1500-kilowatt turbo-alternators generating current at 11,000 volts, which are stepped down and passed through rotary converters to direct current at 600 volts. The cost of construction and equipment on the 31st July, 1912, was £1,332,034. The following table gives particulars of the tramways for the year ended 31st July, 1912.

SOUTH AUSTRALIA.—ADELAIDE ELECTRIC TRAMWAYS.—PARTICULARS OF WORKING, 1911-12.

Year.	Mileage Open for Traffic.	Capital Cost.	Current Generated.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	No. of Persons Employ'd
	Miles.	£	Kil'w't-hrs.	No.	No.	£	£	No.	No.
1912	48.3	1,332,034	7,687,317	4,657,994	37,846,808	277,060	181,020	158	1,057

* Inclusive of price of current.

There are also in South Australia nineteen and three-quarter miles of Government horse tramways in country districts, worked in connection with the railway system, and six and one-quarter miles of private tramways used for passenger service. The subjoined statement gives various particulars of these lines:—

SOUTH AUSTRALIA.—PARTICULARS OF HORSE TRAMWAYS, 1911-12.

Particulars.	Length.	Gauge.	Nature of Traffic.
GOVERNMENT TRAMWAYS.			
	Miles.	ft. in.	
Moonta, Moonta Bay, and Hamley Flat	5½	5 3	Passengers and goods.
Gawler	1½	5 3	"
Victor Harbour and Broadwater	1	5 3	"
Dry Creek and Magazine	1	2 0	Explosives.
Magazine and Broad Creek	1½	2 0	"
Port Broughton and Mundoora	10	3 6	Passengers and goods.
PRIVATE TRAMWAYS.			
Port Adelaide and Alberton	2¼	5 3	Passengers.
Glenelg and Brighton	4	4 8½	"

6. **Western Australia.**—In this State there are a number of horse tramways, amounting in all to a length of twenty-eight miles, which are the property of the Government. Of these the most important is the line between Roeburne and Cossack, constructed on a 2 ft. gauge and under the control of the Colonial Secretary's Department. The length of this line is fourteen and three quarter miles. The remaining thirteen and a half miles belonging to the Government are made up of eleven short lengths varying from two and a half chains to four and a quarter miles, worked in connection with the jetties at various ports for the purpose of providing the necessary communication between such jetties and the goods sheds or warehouses. Most of these short lines are leased at annual rentals, and are under the supervision of the Harbour Master. Their maintenance and improvement is in the hands of the Public Works Department. In addition to these Government lines there are electric tramway systems at Perth and Kalgoorlie carried on by private companies, and at Fremantle and Leonora, under municipal control.

(i.) *Government Tramways.* Particulars as to the working of the Government horse-tramways or as to the rents received therefrom are not generally available. The returns of the Roeburne-Cossack line for the year ended 30th June, 1912, shew that the capital cost of the line to that date was £50,569, the gross revenue for the year being £3269, and the working expenses £720.

(ii.) *Electric Tramways.* There are now five towns in Western Australia which enjoy the benefits of electric tramway systems, namely, Perth, Fremantle, Kalgoorlie, Boulder City, and Leonora.

(a) *The Perth Electric Tramways* were opened for traffic by a private company in 1899, and the system has since been extended to many of the outlying suburbs. It is intended by the Government to take over this tramway system in May, 1913, when it will be run in conjunction with the Government railways. On the 31st December, 1911, there were 22½ miles of line open, the total cost of construction and equipment to that date being £479,791. During the year 7,858,928 passengers were carried, the gross revenue being £86,528 and the working expenses £45,441. Forty-eight motors were in use, and the number of employees was 204. The gauge of line is 3 ft. 6 in.

(b) *The Kalgoorlie and Boulder City Tramways* are also run by a private company, the first line being opened in 1902. At the beginning of 1904 legislative authority was given for the construction of lines in Boulder City and suburbs, and in November, 1904, the last section of the Boulder system was completed. At the end of the year 1911 the total mileage of the whole system—in Kalgoorlie and Boulder City—amounted to 19 miles, the total cost of construction and equipment being £449,104. During the year 2,695,000 passengers were carried. The gauge of this line is 3 ft. 6 in.

(c) *The Fremantle Tramways* were opened in November, 1905, under the control of the municipality. On the 31st August, 1911, there were 8½ miles of line open for traffic, the cost of construction and equipment at that date being £105,026. This line has a gauge of 3 ft. 6 in. During the year 3,750,000 passengers were carried.

(d) *The Leonora-Gwalia Tramway*, three miles in length, formerly a steam tramway, was opened for traffic by electrification on 5th October, 1908. This tramway is under municipal control, and has a gauge of 3 ft. 6 in.

(e) *Particulars of Working of all Electric Tramways.* The subjoined table shews, so far as returns are available, particulars of the working of all electric tramway systems in the State for the years 1901 and 1907-11:—

WESTERN AUSTRALIA.—PARTICULARS OF ELECTRIC TRAMWAYS, 1901 and 1907-11.

Year.	Mileage Open for Traffic.*	Total Cost of Construction and Equipment	Current Generated.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	No. of Persons Employed.
	Miles.	£	Kilowatt-hrs.	No.	No.	£	£	No.	No.
1901	16½	367,037	†	721,056	†	46,270	26,673	30	§
1907	45½	†	4,049,980	2,247,889	14,050,086	143,403	89,266	89	330
1908	47½	968,567	4,065,616	2,316,325	13,136,065	142,182	91,770	89	354
1909	50	1,018,548	3,952,386	2,304,616	13,579,603	144,320	98,236	101	366
1910	53	1,035,357	†3,741,628	2,139,524	12,420,830	139,824	88,110	106	381
1911	53	1,039,421	4,395,044	2,360,341	14,399,558	158,657	93,003	104	359

* For the years 1907 to 1911 inclusive, miles of route are given; for 1901 the figures represent miles of single track. † Not available. ‡ Exclusive of Leonora Tramway.

7. *Tasmania.*—In Hobart there is a system of electric tramways, amounting in all to a length of nine miles, owned by a private company. Under the authority of the Launceston Tramway Act of 1906 the Launceston City Council entered into an agreement with a private company for the construction of a system of electric tramways in the city and suburbs of Launceston. The agreement provided that the company was to run the tramways for a period of twenty-five years, when the Council could purchase the lines and stock at cost price; the electric power required was to be supplied by the Council. This agreement, however, lapsed, and the Council has constructed the tramways, and is running them as a municipal undertaking. The system, which was opened on the 16th August, 1911, has a route mileage of about 5½ miles, the gauge of track being 3 ft. 6 in. An extension of a mile to High Street is under construction, and a further extension of a mile is proposed. The total cost of construction and equipment to the end of October, 1912, amounted to £59,337. Fourteen cars with motors were in use; and the number of employees totalled 80. The number of passengers carried during the year 1911-12 was 1,986,599 and the car mileage was 266,098 miles. The gross revenue for the same period was £14,783, and the working expenses £10,409.

(i.) *Hobart Electric Tramways.* These tramways were opened for traffic in 1893, the total cost of construction and equipment to the 31st December, 1911, being £92,121. The line has a 3 ft. 6 in. gauge. The following table gives particulars of the working of this system for the years 1901 and 1907-11:—

TASMANIA.—PARTICULARS OF WORKING OF HOBART ELECTRIC TRAMWAYS, 1901 and 1907-11.

Year.	Mileage Open for Traffic.	Total cost of Construction and Equipment.	Current Generated	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	Number of Cars in Use.	Number of Persons Employed.
	Miles.	£	Kilowatt-hours	No.	No.	£	£	No.	No.
1901	9	90,000	...	321,633	1,734,120	16,097	11,735	20	90
1907	9	90,000	607,324	445,505	2,504,773	24,421	13,635	22	102
1908	9	90,000	622,207	453,773	2,677,018	26,789	14,446	23	105
1909	9	90,824	748,878	490,410	2,772,047	27,502	15,682	25	105
1910	9	91,788	746,377	518,024	3,074,782	29,490	16,820	25	108
1911	9	92,121	845,403	484,295	3,363,500	32,780	19,310	28	110

8. **Electrical Traction in Commonwealth, 1911-12.**—The subjoined table gives particulars of electric tramways for each State and the Commonwealth. The returns for the Hobart tramways in Tasmania, for the Ballarat and Bendigo tramways in Victoria, for the Rockdale-Brighton-le-Sands in New South Wales, and for the Perth and Kalgoorlie tramways in Western Australia, are for the calendar year 1911; for the Brisbane tramways the returns are for the calendar year 1912; and for other tramways the returns are, generally, for the financial year 1911-12:—

ELECTRIC TRAMWAYS IN COMMONWEALTH, 1911-12.

State.	Mileage (Route) open for Traffic.	Capital Cost.	Current Gene- rated.	Tram Miles Run.	No. of Passen- gers Carried.	Gross Revenue.	Work- ing Ex- penses.	No. of Cars, Motors, and Trail'rs	No. of Em- ployees
	Miles.	£	Kilowatt- hours (,000 omitted).	No. (,000 omitted).	No. (,000 omitted).	£	£	No.	No.
N.S.W.	133	5,167,121	72,982	23,053	250,786	1,463,025	1,211,858	1,055	8,147
Victoria ...	52	497,100	3,504	2,703	15,343	*106,478	*73,436	119	501
Queensland ...	34	†	5,799	3,508	36,375	243,668	†	128	762
South Australia ...	48	1,332,034	7,687	4,658	37,847	277,060	181,020	158	1,057
West. Australia ...	53	1,039,421	4,395	2,360	14,400	158,657	93,003	104	359
Tasmania ...	15	151,458	1,323	750	5,350	47,563	29,719	42	181
Commonwealth	335	8,187,134	95,690	37,032	360,101	2,296,451	1,589,036	1,606	11,007
		†				†	†		

* Exclusive of North Melbourne Tramway. † Not available. ‡ Incomplete.

SECTION XVIII.

POSTS, TELEGRAPHS, AND TELEPHONES.

§ 1. Posts.

1. **The Commonwealth Postal Department.**—Under the provisions of section 51 of the Commonwealth Constitution Act the Commonwealth Parliament was empowered to make laws with respect to the control of the postal, telegraphic, and telephonic services in Australia, and by proclamation, made under section 69 of the same Act, the six separate State Post and Telegraph Departments were amalgamated and taken over by the Federal Executive on the 1st March, 1901. On the 1st December following, the Commonwealth Post and Telegraph Act 1901 came into operation, and the provisions of the various State Acts referring to the postal and telegraphic services thereby ceased to apply; it was, however, specially provided by the Act of 1901 that, until such provisions should be revoked by the Governor-General, all regulations in force, and all rates and charges levied under any State Act should continue in force and be applied in the same manner as if such State Act were not affected by the Commonwealth Act. The administration of the Act of 1901 was placed in the hands of a Postmaster-General, a responsible Minister with Cabinet rank, and of a Secretary having chief control of the Department throughout the Commonwealth under the Postmaster-General, whilst a principal officer in each State was provided for under the style of Deputy Postmaster-General. The rates and charges levied in each State for the transmission of letters, telegrams, and postal articles at the date of Federation remained in force until the Post and Telegraph Rates Act came into operation on the 1st November, 1902. This Act secured uniformity throughout the Commonwealth in the rates charged for the conveyance of newspapers by post, and for the transmission of telegrams, but did not alter the charges made in the individual States for the transmission of letters, cards, parcels, and packets. Uniform postage rates now exist in all the States under the Postal Rates Act of 1910, which came into operation by proclamation on the 1st May, 1911. (See paragraph 6 hereof.)

In previous issues of the Year Book will be found a brief description of the postal services in the earlier period of Australian history. (See Year Book No. 5, page 754.)

2. **Development of Postal Services.**—In 1841 the number of post offices open in Australia was 102, situated mainly in New South Wales and Tasmania. At the end of ten years 101 post offices were open in New South Wales, 44 in Victoria, 72 in South Australia, and 51 in Tasmania. From the year 1851 onwards a remarkable increase in the number of post offices in Australia took place, until, in 1891, the number open on the mainland and Tasmania totalled 4463, of which 1384 were situated in New South Wales, 1729 in Victoria, 307 in Queensland, 629 in South Australia, 86 in Western Australia, and 328 in Tasmania.

On the 31st December, 1911, the postal business had increased to such an extent that 5664 post offices were open for business, of which number 1948 were situated in New South Wales, 1720 in Victoria, 576 in Queensland, 662 in South Australia, 372 in Western Australia, and 386 in Tasmania.

3. **State, Interstate and Oversea Postages for whole Commonwealth.**—In the following table the matter dealt with is divided into (i.) matter posted in the Commonwealth for delivery within the Commonwealth, (ii.) matter received from places outside the Commonwealth, (iii.) matter despatched to places outside the Commonwealth, and (iv.) total postal matter dealt with by the Commonwealth Postal Department in 1901 and from 1907 to 1911, but excluding Interstate Excess.

**STATE, INTERSTATE, AND OVERSEA POSTAGES FOR WHOLE COMMONWEALTH
1901 and 1907-11.**

Year.	Letters and Postcards.	Newspapers.	Parcels.	Packets.
POSTED FOR DELIVERY WITHIN THE COMMONWEALTH (,000 OMITTED).				
1901	210,205	92,383	1,253	36,395
1907	309,069	92,223	2,363	64,786
1908	329,013	96,359	2,508	68,569
1909	347,594	107,516	2,741	76,348
1910	363,893	118,674	2,956	76,991
1911	416,353	122,020	3,205	70,975

OVERSEA RECEIVED (,000 OMITTED).

1901	5,682	7,283	81	2,876
1907	9,541	8,423	119	3,828
1908	13,309*	8,141	107	4,429
1909	14,092	9,145	106	3,620
1910	15,729	10,042	119	3,852
1911	19,445	11,691	142	4,568

OVERSEA DESPATCHED (,000 OMITTED).

1901	4,945	3,055	35	1,319
1907	10,894	5,548	64	2,356
1908	10,624	5,400	68	2,191
1909	11,279	5,712	70	2,406
1910	13,039	6,003	79	3,076
1911	17,265	7,926	83	3,120

**TOTAL POSTAL MATTER DEALT WITH BY THE COMMONWEALTH POSTAL
DEPARTMENT 1901 AND 1907-11, BUT EXCLUDING INTERSTATE EXCESS
(,000 OMITTED).**

1901	220,853	102,727	1,369	40,161
1907	332,301	105,857	2,554	72,045
1908	356,176	110,269	2,680	76,041
1909	372,496	119,931	2,898	81,909
1910	392,851	132,415	3,155	83,599
1911	453,885	139,603	3,419	79,017

* The increase is partly due to the fact that in New South Wales the method of counting was different in previous years.

4. **State, Interstate and Oversea Postages for each State.**—The following table shews separately for each State the postage matter dealt with in 1911 under the same classification adopted in the preceding paragraph :—

STATE, INTERSTATE, AND OVERSEA POSTAGE FOR EACH STATE, 1911.

State.	Letters and Postcards.	Newspapers.	Parcels.	Packets.
POSTED FOR DELIVERY WITHIN COMMONWEALTH (,000 OMITTED).				
New South Wales ...	160,522	59,683	1,572	31,327
Victoria ...	133,737	24,585	580	16,238
Queensland ...	44,210	16,545	637	10,892
South Australia ...	32,206	6,545	186	6,030
Western Australia ...	25,986	5,884	170	4,419
Tasmania ...	19,692	8,778	60	2,069
Commonwealth...	416,353	122,020	3,205	70,975

OVERSEA RECEIVED (,000 OMITTED).

New South Wales ...	8,129	3,035	37	1,315
Victoria ...	5,857	4,355	39	1,452
Queensland ...	2,591	1,927	31	689
South Australia ...	821	1,000	13	394
Western Australia ...	1,515	743	17	430
Tasmania ...	532	631	5	288
Commonwealth...	19,445	11,691	142	4,568

OVERSEA DESPATCHED (,000 OMITTED).

New South Wales ...	6,448	3,714	41	1,556
Victoria ...	5,110	3,200	19	1,214
Queensland ...	1,493	375	9	113
South Australia ...	1,161	188	5	127
Western Australia ...	1,826	263	7	67
Tasmania ...	1,227	186	2	43
Commonwealth...	17,265	7,926	83	3,120

5. **Postal Facilities, 1911.**—The subjoined statement shews the number of post and receiving offices, the area in square miles and the number of inhabitants to each post office (including receiving offices) in each State and in the Commonwealth at the end of the year 1911. It will be observed that the most sparsely populated States have the greatest number of offices in comparison with their population, but in order to judge the relative extension of postal facilities the area of country to each office must also be taken into account. The returns given for South Australia in this and all succeeding tables include those for the Northern Territory. Similarly, the returns for the Federal Capital Territory are included in those for New South Wales.

SQUARE MILES OF TERRITORY AND NUMBER OF INHABITANTS TO EACH POST AND RECEIVING OFFICE, 1911.

State.	* N.S.W.	Vic.	Q'land.	† S.A.	W.A.	Tas.	C'with.
Number of post and receiving offices...	2,490	2,544	1,362	746	479	433	8,054
Number of square miles of territory to each post office in State ...	124	313	492	1,211	2,037	60	369
Number of inhabitants to each office...	680	526	456	564	614	446	567
Number of inhabitants per 100 sq. miles	547	1,523	93	46	30	738	153

* Including Federal Capital Territory.

† Including Northern Territory.

6. Rates of Postage.—Prior to the operation of the Postal Rates Act of 1910, the charges made for the postage of newspapers and parcels, and of interstate and foreign letters, were the same in all the States of the Commonwealth. The rates for the transmission of inland letters, however, were not uniform, the Post and Telegraph Act 1901 having specially provided that the rates and charges levied in any State should continue in force. The last-mentioned regulation, however, was repealed by the Postal Rates Act of 1910, which came into force by proclamation on 1st May, 1911.

The following rates on letters, newspapers, and certain other postal articles posted in the Commonwealth for delivery therein came into force on the 1st May, 1911, the date of proclamation of the operation of the Postal Rates Act of 1910 :—

POSTAL RATES OF CERTAIN ARTICLES POSTED IN THE COMMONWEALTH FOR DELIVERY THEREIN ON AND AFTER 1st MAY, 1911.

Postal Articles.	Rates of Postage.
LETTERS ...	1d. per $\frac{1}{2}$ ounce.
LETTER-CARDS ...	{ Single, 1d. each.
	{ Reply, 1d. each half.
POST CARDS ...	{ Single, 1d. each.
	{ Reply, 1d. each half.
PRINTED PAPERS AS PRESCRIBED ...	$\frac{1}{2}$ d. per 2 ounces or part of 2 ounces.
BOOKS PRINTED OUTSIDE AUSTRALIA ...	$\frac{1}{2}$ d. per 4 ounces or part of 4 ounces.
BOOKS PRINTED IN AUSTRALIA ...	$\frac{1}{2}$ d. per 8 ounces or part of 8 ounces.
MAGAZINES.—That is to say—	
(a) magazines, reviews, serials, and other similar publications printed and published in Australia in numbers at intervals not exceeding three months ...	$\frac{1}{2}$ d. per 8 ounces or part of 8 ounces.
(b) magazines, reviews, serials, and other similar publications (including newspapers) printed and published outside Australia in numbers at intervals not exceeding three months ...	$\frac{1}{2}$ d. per 4 ounces or part of 4 ounces.
HANSARD.—That is, reports of Parliamentary Debates printed and published by the authority of the Commonwealth or of a State ...	$\frac{1}{2}$ d. per 12 ounces or part of 12 ounces.
COMMERCIAL PAPERS, PATTERNS, SAMPLES, AND MERCHANDISE AS PRESCRIBED ...	1d. per 2 ounces or part of 2 ounces.
NEWSPAPERS (without condition as to the number contained in each addressed wrapper) posted by registered newspaper proprietors, or by newsvendors, or returned by an agent or newsvendor to the publishing office ...	1d. per 20 ounces on the aggregate weight of newspapers so posted by any one person at any one time.
ALL OTHER NEWSPAPERS ...	For each newspaper, $\frac{1}{2}$ d. per 10 ounces or part of 10 ounces.

Whilst the bookkeeping sections of the Constitution Act (see Section XIX., § 1, hereinafter) were in force, each State had necessarily to use its own postage stamps, and stamps sold in one State were only allowed to be used on letters posted in that State. The necessity for this arrangement disappeared with the change in the keeping of the Commonwealth accounts, and since the 14th October, 1910, stamps of any State can be affixed to letters, irrespective of the State in which they are posted. There is now a uniform postage stamp for the Commonwealth, a stamp with a design containing characteristic features of Australia having been issued.

(i.) *Letters.* Under the Postal Rates Act of 1910, the charge (1d. for every $\frac{1}{2}$ oz.) for letters posted for delivery within the Commonwealth is now uniform throughout all States. Previous to the 1st May, 1911, various local and interstate rates were in operation within the States. The postage to the United Kingdom was reduced in January, 1891, from sixpence per half-ounce *via* the Red Sea, and fourpence *via* the Cape of Good Hope, to the uniform rate of twopence halfpenny. In 1891 the States were represented at the Congress of the Universal Postal Union held in Vienna, and on the 4th July a convention was signed on their behalf, by which they joined the Union from the 1st October of that year. On that date the rate of postage to all British possessions and to foreign countries included in the Union was reduced to twopence halfpenny. The present charge for postage of interstate letters and of letters to the United Kingdom and to British possessions is now uniformly one penny per half ounce throughout the Commonwealth; the rate on letters to foreign countries (with the exception of New Hebrides, Banks and Torres Islands, where the rate is twopence per half-ounce) is twopence halfpenny for each half-ounce.

(ii.) *Newspapers.* The different rates charged for the carriage of newspapers in the various States, prior to Federation, continued after the control of the Postal Departments had been taken over by the Commonwealth, until the 1st November, 1902, when a uniform rate was imposed by the Post and Telegraph Rates Act 1902. At present the rates on all newspapers posted for delivery within the Commonwealth (without condition as to the number contained in each addressed wrapper posted) by registered newspaper proprietors, or by newsvendors, or returned by newsvendor or agent to the publishing office, is one penny per twenty ounces on the aggregate weight. On all other registered newspapers posted within the Commonwealth for delivery therein the charge is a halfpenny per ten ounces for each newspaper. At the end of the year 1911 there were in all 1784 publications registered in the Commonwealth under section 29 of the Post and Telegraph Act 1901 for transmission by post as newspapers. The charge on postage of registered newspapers for transmission to the United Kingdom is one penny for each newspaper not exceeding eight ounces in weight by the ordinary route, and one penny for each newspaper not exceeding sixteen ounces in weight by the All-Sea Route. To other parts of the world the rate is one penny up to four ounces, and a halfpenny for every additional two ounces. Newspapers which are not registered are charged at the same rates as other printed papers.

(iii.) *Parcels.* Parcels may not exceed 11 lbs. in weight, 3 ft. 6 in. in length, or 6 ft. in length and girth combined. The rate for the inland postage of parcels is sixpence up to 1 lb., and then threepence for every additional pound. For interstate transmission the rate is eightpence up to 1 lb., and then sixpence per lb., and for transmission to the United Kingdom the rate is one shilling up to 1 lb., and sixpence for every additional pound.

(iv.) *Packets.* The regulations for the conveyance of packets vary in the several States. The ordinary rate is one penny for each two ounces. Packets must not as a rule exceed 2 ft. in length, 1 ft. in breadth or depth; or, if in a roll, 2 ft. 6 in. in length. Special rates are allowed for the conveyance of commercial papers, patterns, samples, etc.

8. Registered Letters.—Under section 38 of the Post and Telegraph Act 1901 provision is made for the registration of any letter, packet, or newspaper upon payment of the prescribed fee, and any person who sends a registered article by post may obtain an acknowledgment of its due receipt by the person to whom it is addressed by paying the prescribed fee (see hereunder) in advance at the time of registration in addition to the registration fee.

(i.) *Registration Fees.* The fee payable upon registration of an article is threepence, and the fee payable in order to obtain an acknowledgment of the delivery of the registered article is twopence halfpenny in addition. Registered letters must, as a rule, be handed in at least half-an-hour before the closing of the mails.

(ii.) *Number of Registered Articles Posted.* The subjoined table shews the number of registered articles posted in each State during the year 1911, classified according to the places to which they were despatched for delivery:—

NUMBER OF REGISTERED ARTICLES POSTED DURING 1911.

(,000 OMITTED.)

State.	Posted in each State for Delivery within that State.	Posted in each State for Delivery in other States.	Posted in each State for Delivery in Places outside the C'wealth.	Total.
New South Wales ...	1,080	133	87	1,250
Victoria ...	872	105	70	1,047
Queensland ...	446	52	33	531
South Australia ...	218	31	21	270
Western Australia ...	371	35	40	446
Tasmania ...	172	22	8	202
Commonwealth ...	3,109	378	259	3,746

9. Ocean Mail Services.—Regular steamship communication between Australia and Europe was established in 1852 by a service run by the Peninsular and Oriental Company between Singapore and Sydney, *via* King George's Sound, Adelaide, and Melbourne. This service was inaugurated in September, 1852, by the arrival at Melbourne of the "Chusan," and was continued until 1854, when it was stopped in consequence of the Crimean War; in 1856 a line of steamers was again started, and the service was carried on by the Peninsular and Oriental Company, in conjunction with the Royal Mail Company, for some years.

(i.) *Mail Route via San Francisco.* The service *via* the Red Sea did not at that time give much satisfaction to the public, and was looked upon with a certain amount of disfavour in New South Wales and New Zealand. The effect was to stimulate the colonists to agitate for an improved service, and proposals were made for the establishment of a line of mail packets from Sydney to Panama *via* Wellington, by rail across the isthmus, and thence to Great Britain. The result was that in 1866 the line was started, and continued in operation until the end of 1868, when it was terminated through the failure of the company by which it had been carried out. The completion of the railway across the American continent in 1869, with its western terminus at San Francisco, opened up a new and agreeable route, and in that year a monthly service was inaugurated by the Union Steamship Company, in conjunction with the Pacific Steamship Company, from Sydney to San Francisco *via* Auckland. This service was subsidised to the extent of £37,000 per annum, of which New South Wales paid £25,750 and New Zealand £11,250, and was continued until November, 1890, when a new contract was entered into and the amount of the subsidy largely reduced, the amount of the contribution being based upon the weight of mail matter carried. Various extensions of

the contract were made, but the last agreement made between the New Zealand Government and the Oceanic Steamship Company of San Francisco expired on the 10th November, 1906, and has not since been renewed. From that date mails were carried at Postal Union rates until the 12th April, 1907, when the service was discontinued. At present mails to and from Europe *via* San Francisco are carried by the Union Steamship Company, which receives a subsidy from the New Zealand Government, and by the Oceanic Company. Each of these companies carries Australian mails at poundage rates, with a four-weekly service.

(ii.) *Route via Suez Canal.* The establishment of a mail route *via* America had the effect of stimulating the steamship owners who were engaged in the service *via* Suez, and from that time there was a marked improvement in the steamers, as well as in the punctuality and speed with which the mails were delivered. The Peninsular and Oriental Company, and, at a little later date, the Orient-Pacific Company, have carried mails to and from Australia almost since the inception of ocean steam services. Postal matter was carried by contract until 1905, when the contract between the Peninsular and Oriental Company and the Commonwealth Government ceased, although that between the company and the Imperial Post Office is still in force. Mails are still carried from Australia by the Peninsular and Oriental Company, but are carried at Postal Union rates and not under contract with the Commonwealth. On the 25th April, 1905, the Orient-Pacific Company concluded a new contract with the Commonwealth Government for a fortnightly service between England and Australia. The subsidy was at the rate of £124,880 per annum. This contract has now been replaced by the new mail contract referred to in the next sub-section hereof. Fremantle has, since the year 1900, been the first and last port of call for the mail steamers to Europe, in lieu of Albany, the original port of call. The Peninsular and Oriental and Orient-Pacific Companies' steamers sail alternately every week both from London and Australia conveying the homeward and outward mails.

(a) *The New Mail Contract.* On the 1st January, 1906, tenders were invited by the Commonwealth Postmaster-General for a fortnightly mail service between Adelaide and Brindisi, to alternate with a similar service to be provided by the Imperial Government, and a contract was entered into with Sir James Laing and Company Limited, providing for a service at an annual subsidy of £125,000. This contract, however, fell through, and new tenders were accordingly called for. On the 15th November, 1907, an agreement was entered into with the Orient Steam Navigation Company Limited providing for a fortnightly service for a period of ten years, commencing in February, 1910. The mail service is to be carried out by existing vessels belonging to the company and by five new mail ships, which have been specially built, and which are each over 12,000 tons gross registered tonnage and of not less than seventeen knots speed. Two more new vessels were to be added within eighteen months and six years respectively from February, 1910, and under this provision the *Orama* entered into running during November, 1911. The vessels are to call at Fremantle, Adelaide, Melbourne, Sydney, and Brisbane, and at least six of them at Hobart during the months of February to May inclusive. The voyage from Taranto to Adelaide is to be completed within twenty-six days fourteen hours, and from Adelaide to Taranto within twenty-seven days two hours, but the latter period may be exceeded by thirty-six hours during the prevalence of the south-west monsoon. The amount of the subsidy is fixed at £170,000 per annum; but, if the earnings of the company be decreased, or the expenses increased, by reason of any Commonwealth shipping legislation passed subsequently to the date of the agreement, to the extent of not less than £5000 a year, the contractors have the right to terminate the agreement unless the subsidy is increased. Insulated space of not less than 2000 tons of forty cubic feet is to be provided in each of the new vessels, and the freights are not to exceed one halfpenny per lb. for butter and sixty shillings per ton for fruit. White labour only is to be employed, and no discrimination is to be made between unionists' and non-unionists. If before or during the sixth year of the period of the contract an accelerated service is provided by any competing line of mail ships, the contractors must, if so required by the

Postmaster-General, provide a service equal to the competing service, at an increased subsidy, to be determined by agreement or arbitration. The Commonwealth flag must be flown on the mail ships, which the Commonwealth has the right to purchase at a valuation at any time. Within six months of the Postmaster-General establishing a permanent wireless telegraphy station at Rottneet Island, or at any point on the coast between Fremantle and Brisbane, the company must fit the mail ships with wireless telegraphy installations. The new service was inaugurated on the 11th February, 1910.

(b) *French and German Subsidised Mail Services.* Vessels belonging to the Messageries Maritimes and the Norddeutscher Lloyd, which are under contract respectively with the French and German Governments to convey mails monthly between Marseilles and New Caledonia and between Bremen and Sydney, *via* Genoa, also carry mails for the Commonwealth Government from Australia to Europe at Postal Union rates. The Messageries Maritimes service commenced in November, 1882; the amount of the annual subsidy granted by the French Government is £120,000. The first contract for the establishment and maintenance of a mail steamship line between Germany and Australia was made between the Imperial German Government and the Norddeutscher Lloyd in 1885, and the service was inaugurated in July, 1886, with the steamer *Salier*.

(iii.) *Route via Vancouver and Canadian Pacific Railway.* During the year 1893 a direct monthly service was started between Sydney and Vancouver, in British Columbia, *via* Wellington, in New Zealand, and thence to Liverpool *via* the Canadian-Pacific Railway, the New South Wales Government paying an annual subsidy of £10,000 for the maintenance of this service for a period of three years. In 1896 the agreement was renewed for a further period of three years, and in 1899, was again renewed for four years, subject to the same terms and conditions, except that the route was *via* Brisbane instead of Wellington. The contract was further extended, at an increased subsidy, from time to time until the 31st July, 1911, at a subsidy of £26,626 per annum. This subsidised service has now been discontinued. Mails for Canada are forwarded *via* New Zealand through Sydney at poundage rates.

(iv.) *Other Ocean Mail Services.* In addition to the mails *via* the Suez Canal, a number of other services, both regular and irregular, are maintained between the Commonwealth and various parts of the world, and also between the principal ports in the various States and a number of small ports in the less settled parts of the Commonwealth which are inaccessible by rail. The following statement gives a summary, in so far as returns are available, of all mail services maintained between the Commonwealth and other countries and between ports in the Commonwealth. The amounts of subsidies specified are the amounts payable per annum unless otherwise stated.

SUMMARY OF MAIL SERVICES, COMMONWEALTH OF AUSTRALIA, 30th JUNE, 1912.

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
1. <i>To and from Europe, via Suez—</i> (a) <i>Peninsular and Oriental*</i> ...	Fortnightly	Adelaide, Fremantle and London, <i>via</i> Brindisi and Marseilles	Subsidised by Imperial Govt. Mails from Aust. at Postal Union rates.
(b) <i>Orient-Pacific*</i>	Adelaide, Fremantle & London, <i>via</i> Taranto	Subsidised. Date of agreement, 15th Nov., 1907. Term from Feb., 1910. Amt. of subsidy £170,000.
(c) <i>Messageries Maritimes</i> ...	Every four weeks	New Caledonia and Marseilles, <i>via</i> Fremantle and Adelaide	Subsidised by French Govt. Mails from Aust. at Postal Union rates.
(d) <i>Norddeutscher Lloyd</i> ...	13 voyages yearly.	Fremantle, Adelaide & Bremen, <i>via</i> Genoa	Subsidised by German Govt. Mails from Aust. at Postal Union rates.

* Mails carried also to India *via* Colombo.

† Carries also mails to Canada and the United States.

SUMMARY OF MAIL SERVICES.—(Continued.)

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
<i>Western Australia—continued—</i>			
(c) Messageries Maritimes, Nord-deutscher Lloyd, and the German and Ausn. lines ...	Every four weeks	Fremantle and Adelaide	Postal Union rates by first two, and poundage rates by last line.
(d) White Star line ...	Monthly	Albany and Adelaide	Poundage rates.
(ii.) TO & FROM PORTS ON N.W. COAST			
(a) State Steamship Service ...	"	Fremantle and Derby	Subsidised by agreement dated 28th February, 1910, for three years. Amount of subsidy, £5500. Subsidy paid by Western Australia. Poundage rates. " "
(b) " " ...	Once each sixty days	Fremantle & Darwin	
(c) West Aust. & Ocean S. Co.'s	Fortnightly	Fremantle and Broome	
(d) Ausn. United S. Navigation and Adelaide S. Co.'s	Irregularly during the cattle season	Fremantle, Derby, and Wyndham	
(iii.) TO AND FROM PORTS ON S. COAST			
(a) State Steamship Service ...	Weekly	Albany and Esperance	Subsidised by agreement dated 1st May, 1912, for three years. Amount of subsidy, £3,250.
(b) " " ...	Fortnightly	Albany & Israelite Bay	
(c) " " ...	Quarterly	Albany and Eucla	
9. <i>Tasmania—</i>			
(a) Union S.S. Co. and Huddart, Parker Proprietary	3 times a week	Melb'rne & Launceston	Subsidised by agreement dated 1st October, 1912, for two years. Amount of subsidy, £13,000.
(b) Do. do. do. ...	Twice a wk.	" Burnie	
(c) Do. do. do. ...	Weekly	Sydney, Hobart, and Wellington	Poundage rates.
(d) Union Steamship Co. ...	Fortnightly	Sydney, Eden, Launceston, and Devonport	" "
(e) New Zealand mail services, see above New Zealand, 3 (a) & (b)	Twice a wk.	Sydney, Melb'ne, Hobart, Bluff, Dunedin, Christchurch, Wellington and Auckland	" "
(f) To and from ports in Western districts	Weekly	Hobart and Strahan	" "
(g) Ellerker and Co. ...	"	Melbourne, Burnie, etc.	Subsidised by agreement dated 1st January, 1913, for three years. Amount of subsidy £255 per annum.
(h) Huon Channel and Peninsula Steamship Co. Ltd.	Twice a wk.	Hobart and Tasman Peninsula Ports	
(i) Holyman and Sons Ltd. ...	"	Hobart & Maria Island	Subsidised by agreement dated 1st January, 1913, for three years. Amount of subsidy £25 per annum. Subsidised by agreement dated 1st January, 1913, for one year. Amount of subsidy £500 per annum, £250 paid by Tasmanian Government and £250 by Commonwealth Government.
(j) " " ...	Thrice weekly	Launceston and Furneaux group of Islands	
(k) Stephenson & Gunn ...	"	Launceston and King Island	Subsidised by agreement dated 1st January, 1913, for one year. Amount of subsidy £300 per annum.
10. <i>To and from Northern Territory—</i>			
(i.) NORTHERN TERRITORY—			
(a) The Eastern and Ausn., and the China Navigation Co.'s	Irregularly	(To and from Adelaide, Melb'rne, and Sydney, via North Queensland ports, extending to China and Japan)	Poundage rates.
(b) Burns, Philp and Co. ...	Monthly	Melbourne to Darwin, via North Queensland ports en route to Java	Postal " Union " rates.
(c) Royal Dutch Packet S.N. Co.	Every two months	Darwin and Boroloola, calling half-yearly at Roper River	Poundage rates
(d) Jolly and Co. ...	Four times a year	Darwin and Wyndham	Subsidised by agreement till 30th June, 1913. Amount of subsidy, (d) £1540; (e) £150 per voyage.
(e) " " ...	Every eight weeks		
(f) State Steamship Service of Western Australia	Every two months	Fremantle and Darwin	Subsidised by Western Australian Government.

SUMMARY OF MAIL SERVICES.—(Continued.)

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
<i>To Eastern Ports—</i>			
(a) Burns, Philp & Co. ...	Monthly	Sydney, Sourabaya, Samarang, Batavia, and Singapore	Subsidised by N.S.W. Govt. Mails at poundage rates.
(b) China Navigation, Eastern & Ausn., and Burns, Philp Co.'s	About three times a month	Sydney, to Hong Kong, Manila, etc., via North Queensland ports	Poundage rates.
(c) Norddeutscher Lloyd ...	Monthly	Via Germ'n New Guinea, Bismarck Archipelago, and Hongkong	Postal Union rates.
(d) Nippon Yusen Kaisha ...	..	Sydney to Manila, China, and Japan, via N. Queensland ports	.. ..
(e) Royal Dutch Packet S. N. Co.	Monthly	Melbourne to Java, via Sydney and Queensland ports.	Poundage rates.
(f) Various other steamers ...	About monthly	Sydney or Newcastle and ports in Borneo, Java, Sumatra, and Malay Peninsula	.. ..
(g) W.A.S.N. Co. & Ocean S.S. Co.	Fortnightly	W.A. Ports, Java, and Singapore	.. ..
12. <i>South Africa—</i> White Star, Lund's, and other Companies	Irregularly	Various	.. ..
13. <i>North America—</i>			
(a) Weir line ...	..	Sydney, San Francisco, and Vancouver	Poundage rates.
(b) Various steamers ...	..	Sydney or Newcastle to San Francisco	.. ..
(c) Various steamers ...	..	Sydney to Guaymas (Mexico)	.. ..
(d) Union S.S. Co. ...	13 voyages yearly	Syd., Wellington, Tahiti and San Francisco	.. ..
(e) " " ...	Every four weeks	Sydney, Auckland, Fiji and Vancouver	.. ..
14. <i>South America—</i> Various steamers	About weekly	Sydney or Newcastle via N. Zealand to ports in Chile, Brazil, Peru, Uruguay, and Argentine.	Poundage rates.
15. <i>Pacific Islands—</i>			
(a) Burns, Philp and Co.	Monthly	Sydney to Lord Howe & Norfolk Islands, N. Hebrides	Subsidised by Commonwealth at £19,850 per annum.
(b) " "	Every two months	Sydney to Gilbert and Marshall Islands	
(c) " "	Every six weeks	Papua	
(d) " "	..	Solomon Islands	
(e) Royal Dutch Packet S. N. Co.	Monthly	Melbourne to Papua via Sydney and Queensland ports	Poundage rates.
(f) German S.S. Co. ...	Every 4 months	.. ..	Subsidised by German Gov.
16. <i>Noumea—</i>			
(a) Messageries Maritimes	Fortnightly	Sydney and Noumea and to Vila (New Hebrides) once a month	Postal Union rates.
(b) Other steamers ...	About fortnightly	Sydney and Noumea	Poundage rates.
17. <i>Fiji—</i>			
(a) Union S.S. Co. ...	Monthly	Sydney and Suva	.. ..
(b) " " ...	..	Sydney, Auckland, Suva, Tonga, and Samoa	.. ..
18. <i>Fiji and Noumea—</i> Burns, Philp and Co.	..	Sydney and Suva	.. ..
19. <i>Ocean and Pleasant Islands—</i> Various steamships	..	Sydney, Ocean and Pleasant Islands	.. ..

10. **Amount of Mail Subsidies Paid.**—The following table shews the amounts of subsidies for ocean and coastal mail services as existing on 31st December, 1912, which are paid by the Commonwealth Postal Department.

MAIL SUBSIDIES.—OCEAN AND COASTAL SUBSIDIES, 1912.

Service...	Orient Pacific.	Qu'ensland Ports.	South Australian Ports.	Western Australian Ports.	Tasmanian Ports.
	£	£	£	£	£
Annual Subsidy	170,000	24,450	5,548	8,750	13,830

During the year 1911 the amount paid by the Commonwealth for conveyance of mails at poundage rates by non-contract vessels was £27,100; by road services, £323,872; and by railway services, £311,874.

11. **Average and Fastest Time of Mails to and from London.**—Great progress has been made in regard to the means of postal communication with the United Kingdom and the continents of Europe and America. In 1857 there was an unsatisfactory ocean mail service, which nominally brought monthly mails, with news nearly sixty days old; at the present time, though but fifty years have elapsed, there are four lines of modern ocean steamships, which bring the mails in about twenty-nine days to Adelaide, in addition to services by way of New Zealand, *via* San Francisco and Vancouver. After leaving Fremantle, where the Western Australian mails are landed, the outward mail steamers *via* the Suez Canal all call at Adelaide, where the remaining mails are landed and conveyed to their ultimate destination by rail. The subjoined table shews the average and the fastest times occupied in the conveyance of mails from London to Adelaide and *vice versa* during the year 1911:—

AVERAGE AND FASTEST TIME OCCUPIED IN CONVEYANCE OF MAILS VIA SUEZ CANAL BETWEEN LONDON AND ADELAIDE, AND VICE VERSA, DURING 1911.

Service.	London to Adelaide.				Adelaide to London.			
	Average Time.		Fastest Time.		Average Time.		Fastest Time.	
	Days.	Hours.	Days.	Hours.	Days.	Hours.	Days.	Hours.
Peninsular and Oriental S.N. Co., <i>via</i> Brindisi and Colombo ...	28	4½	27	23	29	16	29	7
Orient Pacific S. N. Co., <i>via</i> Naples and Suez ...	28	5	28	1	30	12	30	2
*Messageries Maritimes, <i>via</i> Mar- seilles ...	...	...	...	...	34	1	32	3
*Norddeutscher Lloyd, <i>via</i> Genoa ...	...	...	...	...	32	21	31	14

* No mails were received from London by the Messageries Maritimes or by the Norddeutscher Lloyd services

The journey by rail from Adelaide, where the mails for the eastern States are landed, to Melbourne takes 17½ hours; from Adelaide to Sydney, 42 hours, including a stop of about seven hours at Melbourne; while the through journey from Adelaide to Brisbane takes just over three days. The journey from Melbourne to Hobart occupies about 29 hours, *via* Launceston, and about 32 hours direct.

The average time occupied in the conveyance of mails from London to Sydney *via* Vancouver is a little over 37 days, and from Sydney to London by the same route nearly 35. A table shewing the average and fastest times of this service was given in previous issues (see Year Book No. 5, p. 766), but the discontinuance of the contract with the company operating between Australia and Vancouver renders the table no longer desirable.

12. Money Orders and Postal Notes.—The issue of money orders and postal notes in the Commonwealth is regulated by sections 74 to 79 of the Post and Telegraph Act 1901. A money order, which may be issued for payment either within the Commonwealth or abroad, may not be granted for a larger sum than £20, nor a postal note, which is payable only within the Commonwealth, for a larger sum than twenty shillings. Money orders are sent direct from the Commonwealth to the United Kingdom, and to most of the British colonies and possessions; to the German Empire and German colonies; to Italy; and to the United States of America. Money orders, payable in Japan and China, are sent *via* Hong Kong; orders payable in all other countries are sent through the General Post Office in London, where new orders are issued and forwarded to the addresses of the payees, less threepence for every £5, or part thereof. In order that the full amount of the original order may be forwarded to the payee, this extra commission must be paid by the remitter.

(i.) *Value of Orders Issued and Paid and of Notes Sold.*—The following table shews the total value of money orders issued and paid, and of postal notes sold in each State and in the Commonwealth during the year 1911, together with the total amount of commission on money orders and poundage on postal notes received by the Postal Department:—

VALUE OF MONEY ORDERS ISSUED AND PAID AND OF POSTAL NOTES SOLD, TOGETHER WITH THE TOTAL AMOUNTS OF COMMISSION AND POUNDAGE RECEIVED IN EACH STATE DURING 1911.

State.	Value of Money Orders Issued.	Value of Money Orders Paid.	Net Money Order Commission Received.	Value of Postal Notes Sold.	Poundage Received on Postal Notes
	£	£	£	£	£
New South Wales ...	2,819,183	2,949,264	21,677	1,194,025	23,389
Victoria ...	1,139,505	1,437,537	10,021	935,042	18,243
Queensland ...	937,710	752,958	9,888	310,328	5,993
South Australia ...	375,103	348,436	3,908	206,416	4,128
Western Australia ...	1,053,261	741,187	8,335	255,986	4,550
Tasmania ...	259,161	225,864	2,537	115,520	2,264
Commonwealth ...	6,583,923	6,455,246	56,366	3,017,317	58,567

(ii.) *Rates of Commission on Money Orders.* The rates of commission chargeable for the issue of money orders are as follows:—

RATES OF COMMISSION, MONEY ORDERS, 1912.

If Payable in—	For sums—							
	Not exceeding £2.	Exceeding £2, but not exceeding £5.	Exceeding £5, but not exceeding £7.	Exceeding £7, but not exceeding £10.	Exceeding £10, but not exceeding £12.	Exceeding £12, but not exceeding £15.	Exceeding £15, but not exceeding £17.	Exceeding £17, but not exceeding £20.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
The Commonwealth...	0 6	0 6	1 0	1 0	1 6	1 6	2 0	2 0
New Zealand and Fiji ...	0 6	1 0	1 6	2 0	2 6	3 0	3 6	4 0
Papua ...	0 9	0 9	1 6	1 6	2 3	2 3	3 0	3 0
U. Kingdom & other countries	Sixpence for any amount up to £2 and 3d. for each additional £1 or fraction thereof.							

Remittances may also be made by telegraph to and from money order offices in the Commonwealth which are also telegraph or telephone offices, and to New Zealand.

The charge for a telegraph money order is the cost of the telegram of advice in addition to the ordinary commission. The remitter must also send a telegram to the payee advising the transmission of the money, which telegram must be produced by the payee when applying for payment.

(iii.) *Rates of Poundage on Postal Notes.* The values of the notes issued have been so arranged that any sum of shillings and sixpences up to £1 can be remitted by not more than two of these notes. Broken amounts not exceeding fivepence (but not fractions of a penny) may be added by affixing postage stamps. The poundage or commission charged on notes of different denominations is as follows :—

POUNDAGE RATES, POSTAL NOTES, 1912.

Denomination of Note ...	6d. to 1s. 6d.	2s. to 4s. 6d.	5s.	7s. 6d.	10s. to 20s.
Poundage charged ...	$\frac{1}{2}$ d.	1d.	1 $\frac{1}{2}$ d.	2d.	3d.

13. **Number and Value of Money Orders and Postal Notes Issued and Paid.**—The following table shews the total number and face value of money orders and postal notes issued and paid in the Commonwealth during 1901 and from 1907 to 1911:—

NUMBER AND VALUE OF MONEY ORDERS AND POSTAL NOTES ISSUED AND PAID, 1901 and 1907-11.

Year.	Money Orders.				Postal Notes.			
	Issued.		Paid.		Issued.		Paid.	
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.
	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).
1901 ...	1,318	4,193	1,339	4,081	3,515	1,292	3,522	1,293
1907 ...	1,387	5,533	1,374	5,508	6,057	2,274	6,057	2,274
1908 ...	1,437	5,733	1,402	5,725	6,319	2,391	6,322	2,389
1909 ...	1,460	6,093	1,426	6,041	6,872	2,598	6,867	2,595
1910 ...	1,500	6,368	1,424	6,259	7,446	2,796	7,446	2,796
1911 ...	1,583	6,584	1,448	6,455	8,042	3,017	8,042	3,017

14. **Classification of Money Orders Issued and Paid.**—The following table shews the number and value of money orders issued in each State during the year 1911 and classified according to the country where payable :—

MONEY ORDERS ISSUED IN EACH STATE, CLASSIFIED ACCORDING TO COUNTRY WHERE PAYABLE, 1911.

State in which Issued.	Where Payable.				Total.
	In the Com- monwealth.	In New Zealand.	In the United K'dom.	In Other Countries.	
NUMBER.					
New South Wales	541,265	11,498	75,384	12,260	640,357
Victoria	223,249	6,165	39,306	10,902	279,622
Queensland	204,141	2,075	34,229	6,552	246,997
South Australia	78,795	1,124	17,933	4,578	102,430
Western Australia	192,170	1,332	35,005	5,124	233,631
Tasmania	71,380	1,934	5,589	1,212	80,115
Commonwealth	1,311,000	24,128	207,396	40,628	1,583,152

MONEY ORDERS ISSUED IN EACH STATE, Etc.—(Continued).

State in which Issued.	Where Payable.				Total.
	In the Com- monwealth.	In New Zealand.	In the United Kingdom.	In Other Countries.	
VALUE.					
	£	£	£	£	£
New South Wales	2,579,819	33,879	164,449	41,036	2,819,183
Victoria ...	1,014,491	19,526	78,285	27,203	1,139,505
Queensland ...	813,414	7,116	77,665	39,515	937,710
South Australia ...	320,054	3,440	35,422	16,187	375,103
Western Australia	921,619	6,177	81,982	43,483	1,053,261
Tasmania ...	240,191	7,055	9,494	2,421	259,161
Commonwealth	5,889,588	77,193	447,297	169,845	6,583,923

The following table shews the number and value of money orders paid in each State during the year 1911, and classified according to the country where issued :—

MONEY ORDERS PAID IN EACH STATE, CLASSIFIED ACCORDING TO THE COUNTRY OF ISSUE, 1911.

State in which paid.	Where Issued				Total.
	In the Commonwealth.	In New Zealand.	In the United Kingdom.	In Other Countries.	
NUMBER.					
New South Wales	541,493	34,672	19,310	13,312	608,787
Victoria ...	292,538	24,241	12,934	8,671	338,384
Queensland ...	175,072	2,734	7,533	3,012	188,351
South Australia ...	77,801	1,660	3,237	1,313	84,011
Western Australia	150,393	1,936	5,986	1,174	159,489
Tasmania ...	58,290	6,219	2,066	2,116	68,691
Commonwealth	1,295,587	71,462	51,066	29,598	1,447,713

VALUE.					
	£	£	£	£	£
New South Wales	2,721,479	95,869	75,148	56,768	2,949,264
Victoria...	1,298,664	61,959	43,705	33,209	1,437,537
Queensland ...	700,314	9,954	29,931	12,759	752,958
South Australia ...	327,537	4,938	11,046	4,915	348,436
Western Australia	707,359	5,205	23,679	4,944	741,187
Tasmania ...	200,994	14,425	5,387	5,058	225,864
Commonwealth	5,956,347	192,350	188,896	117,653	6,455,246

In the above tables money orders payable or issued in foreign countries, which have been sent from or to the Commonwealth through the General Post Office at London, are included in those payable or issued in the United Kingdom.

15. Classification of Postal Notes Paid.—The subjoined table shows the number and value of postal notes paid during the year 1911 in each State and in the Commonwealth, classified according to the State in which they were issued.

Particulars regarding the total number and value of postal notes issued and paid during previous years since the inauguration of the Commonwealth have already been given in paragraph 13 hereof.

**NUMBER AND VALUE OF POSTAL NOTES PAID, CLASSIFIED ACCORDING TO
STATE OF ISSUE, 1911.**

State in which Paid.	Postal Notes Issued in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
NUMBER.							
New South Wales	2,586,323	110,425	127,682	38,776	23,234	21,910	2,908,350
Victoria	179,584	2,061,221	34,071	60,149	45,763	53,462	2,434,250
Queensland	44,849	10,640	623,371	2,261	1,610	920	683,651
South Australia	34,695	23,249	1,958	426,255	14,080	1,140	501,377
Western Australia	6,021	11,196	993	5,187	450,256	692	474,345
Tasmania	388,113	336,190	26,345	44,473	8,549	236,261	1,039,931
Commonwealth	3,239,585	2,552,921	814,420	577,101	543,492	314,385	8,041,904
VALUE.							
New South Wales	£ 977,451	£ 46,234	£ 50,010	£ 14,268	£ 10,980	£ 7,621	£ 1,106,564
Victoria	77,109	770,741	12,741	24,537	24,999	21,077	931,204
Queensland	19,507	4,739	236,501	960	910	387	263,004
South Australia	17,052	10,239	888	149,481	8,106	499	186,265
Western Australia	2,744	5,333	480	2,531	206,909	252	218,249
Tasmania	100,162	97,755	9,709	14,639	4,078	85,684	312,027
Commonwealth	1,194,025	935,041	310,329	206,416	255,982	115,520	3,017,813

16. The Value Payable Post. This is a system under which the Postal Department undertakes to deliver registered articles sent by parcel post within the Commonwealth, and to recover from the addressee on delivery a specified sum of money fixed by the sender, and to remit the sum to the sender by money order, for which the usual commission is charged. The object of the system is to meet the requirements of persons who wish to pay at the time of receipt for articles sent to them, and also to meet the requirements of traders and others who do not wish their goods to be delivered except on payment. In addition to the ordinary postage, commission on the value of the articles transmitted at the rate of twopence on sums not exceeding ten shillings, and one penny

for each additional five shillings or part thereof, must be prepaid by postage stamps affixed to the articles distinct from the postage and marked "commission." The registration fee (threepence) and the proper postage must also be prepaid. If the addressee refuse delivery, the parcel is returned to the sender free of charge. Any article that can be sent by parcel post may be transmitted as a value-payable parcel. Letters may also be sent as value-payable parcels, if prepaid at the letter rate of postage and handed to the parcels clerk in the same manner as in the case of parcels. The subjoined statement gives particulars of the number and value of parcels sent through the Value Payable Post in each State during the years 1907 to 1911. From these figures it will be seen that the business in Queensland is greatly in excess of the combined transactions of all the other States, owing to the fact that the system has been established in that State for some years, but was only extended to the whole Commonwealth with the advent of Federal control of the post office. Western Australia is the only other State to make use of this system to any extent, the business transacted by that State and Queensland amounting to 84 per cent. of the total for the Commonwealth.

VALUE PAYABLE PARCELS POST.—NUMBER POSTED, VALUE COLLECTED, AND REVENUE, 1907 to 1911.

	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
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NUMBER OF PARCELS POSTED.

	No.	No.	No.	No.	No.	No.	No.
1907	4,814	617	27,729	42	9,236	72	42,510
1908	6,400	856	26,865	125	13,093	62	47,401
1909	7,585	1,051	31,765	149	19,250	42	59,842
1910	7,901	894	34,917	214	21,940	110	65,976
1911	9,198	1,142	37,803	195	21,391	66	69,795

VALUE COLLECTED.

	£	£	£	£	£	£	£
1907	7,763	1,075	36,876	76	15,782	83	61,655
1908	11,755	1,342	36,924	236	21,331	132	71,720
1909	10,926	1,697	39,351	234	30,712	93	83,013
1910	14,736	1,656	43,478	288	34,697	344	95,199
1911	15,314	2,312	52,628	413	35,659	165	106,491

REVENUE, INCLUDING POSTAGE, COMMISSION ON VALUE, REGISTRATION AND MONEY ORDER COMMISSION.

	£	£	£	£	£	£	£
1907	702	96	3,954	5	1,333	7	6,097
1908	985	135	3,713	18	1,869	9	6,729
1909	937	164	4,112	22	2,603	6	7,844
1910	1,201	162	4,634	19	3,178	18	9,212
1911	1,087	225	5,241	28	2,943	9	9,533

17. Transactions of the Dead Letter Office.—Under sections 45 to 53 of the Post and Telegraph Act 1901 the Postmaster-General may cause all unclaimed and undelivered postal articles originally posted within the Commonwealth which have been returned from the place to which they were forwarded to be treated as unclaimed

articles and opened. Every unclaimed letter and postal article must be kept for the prescribed period at the office to which it has been transmitted for delivery, and must then be sent to the General Post Office. Letters and packets originally posted elsewhere than in the Commonwealth are returned to the proper authorities in the country in which they were so posted, or, if originally posted in another State, are returned to the General Post Office of that State; but unclaimed or undelivered newspapers may be forthwith sold, destroyed, or used for any public purpose. Opened postal articles not containing anything of value are returned to the writer or sender if his name and address can be ascertained, but may otherwise be destroyed forthwith. As regards opened letters and packets containing valuable or saleable enclosures, a list and memorandum of the contents are kept, and a notice is sent to the person to whom the letter or packet is addressed if he be known, or otherwise to the writer or sender thereof if he be known. Upon application within three months of the date of such notice the letter or packet may be claimed by the addressee, or, failing him, by the writer or sender. If unclaimed within three months, the letter and contents may be destroyed or sold, and the proceeds paid into the consolidated revenue fund. The following table shews the total number of letters, postcards, and packets dealt with by the Dead Letter Offices in the Commonwealth during the year 1911, together with the number of inland, interstate, and international letters either returned to writers, delivered, etc., destroyed, or returned as unclaimed :—

TRANSACTIONS OF DEAD LETTER OFFICES IN THE COMMONWEALTH, 1911.

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	O'wlth.
LETTERS (,000 OMITTED).							
Returned to writers, delivered, etc. ...	354	310	130	51	108	53	1,006
Destroyed in accordance with Act ...	105	59	16	15	10	7	212
Returned to other States or Countries as unclaimed ...	81	53	37	23	36	39	269
Total ...	540	422	183	89	154	99	1,487

POSTCARDS (,000 OMITTED).

Returned to writers, delivered, etc. ...	4	7	16	7	19	3	56
Destroyed in accordance with Act ...	48	7	5	7	4	3	74
Returned to other States or Countries as unclaimed ...	6	7	3	3	4	1	24
Total ...	58	21	24	17	27	7	154

PACKETS (,000 OMITTED).

Returned to writers, delivered, etc. ...	465	61	98	49	43	5	721
Destroyed in accordance with Act ...	27	319	23	46	5	...	420
Returned to other States or Countries as unclaimed ...	4	64	36	19	33	16	172
Total ...	496	444	157	114	81	21	1,313
Grand Total (letters, postcards, & packets)	1,094	887	364	220	262	127	2,954

18. **Post Offices and Receiving Offices and Employees.**—The following tables shew, as far as returns are available, the numbers of post and receiving offices and the corresponding numbers of employees in each State and in the Commonwealth at the end of the year 1901, and from 1907 to 1911 inclusive:—

NUMBER OF POST OFFICES AND RECEIVING OFFICES, 1901 and 1907-11.

State.	1901.		1907.		1908.		1909.		1910.		1911.	
	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.
New South Wales	1,684	524	1,809	510	1,842	526	1,884	513	1,911	526	1,948	542
Victoria	1,637	18	1,655	670	1,633	713	1,642	728	1,655	765	1,730	824
Queensland*	411	823	430	908	499	896	532	856	558	828	576	786
South Australia†	699	...	704	12	686	23	631	92	648	90	662	84
Western Australia	187	28	298	67	320	72	331	82	343	87	372	107
Tasmania†	376	...	375	31	378	36	377	40	391	38	386	47
Commonwealth	4,994	1,393	5,322	2,199	5,358	2,272	5,387	2,311	5,506	2,328	5,664	2,390

* For the year 1901 the number of receiving offices is included in post offices in the official returns, and separate figures here given are estimated. † The return for 1901 includes both post offices and receiving offices.

NUMBER OF EMPLOYEES AND NUMBER OF MAIL CONTRACTORS, 1901 and 1907-11.

State.	1901.		1907.		1908.		1909.		1910.		1911.	
	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.
New South Wales	5,636	984	6,964	1,072	7,343	1,305	7,469	1,553	8,622	1,602	10,844	1,733
Victoria	3,962	890	5,744	758	5,989	776	6,285	804	7,043	848	8,533	866
Queensland*	2,616	—	3,021	640	3,073	550	3,146	589	3,247	720	4,455	747
South Australia†	1,945	—	1,767	261	1,871	237	1,896	259	1,905	268	2,298	361
Western Australia	1,303	140	1,579	208	1,670	206	1,736	234	1,894	233	2,621	251
Tasmania†	865	—	814	172	843	177	874	186	969	189	1,178	260
Commonwealth	16,327	2,014	19,889	3,111	20,789	3,251	21,406	3,625	23,680	3,860	29,929	4,218

* Country postmasters and receiving officers included in employees. † Non-official postmasters are included in employees. ‡ The return for 1901 includes all persons in the pay of the Postal Department.

19. **Postal Routes.**—The following table shews the length of postal routes and the number of miles travelled by mail conveyances during the year 1911:—

POSTAL ROUTES, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
MILES OF ROUTE.							
Railway	3,725	3,388	4,264	2,225	2,376	655	16,633
Water	2,928	57	2,267	9,179	2,951	911	18,293
Other	37,102	11,730	27,916	8,668	10,336	2,077	97,829
Total...	43,755	15,175	34,447	20,072	15,663	3,643	132,755

POSTAL ROUTES, 1911—Continued.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
MILES TRAVELLED BY MAIL CONVEYANCES (,000 omitted.)							
Railway ...	5,475	4,339	3,602	1,781	1,524	820	17,541
Water ...	577	22	180	297	155	210	1,441
Other ...	9,489	3,841	5,072	1,607	881	885	21,725
Total ...	15,491	8,202	8,854	3,685	2,560	1,915	40,707

20. Gross Revenue of Postal Department.—The following table shews the gross revenue of the Postal Department for the years ended 30th June, 1901 and 1907 to 1912 inclusive, under three heads, viz., the Postal, the Telegraph, and the Telephone branches. In the Postal branch is included the revenue derived from money-order commissions, poundage on postal notes, private boxes and bags, and miscellaneous sources. The introduction of penny postage throughout the Commonwealth is responsible for an estimated loss to the Department of approximately £470,000 for the year 1911-12.

GROSS REVENUE OF POSTAL DEPARTMENT, 1901 and 1907-12.

Year ended 30th June.	Postal Branch.	Telegraph Branch.	Telephone Branch.	Total.
	£	£	£	£
1901* ...	516,181	224,484†	†	740,665
1907 ...	2,125,365	614,983	388,226	3,128,574
1908 ...	2,289,874	649,481	410,741	3,300,096
1909 ...	2,325,326	642,548	441,551	3,409,425
1910 ...	2,541,080	681,038	509,623	3,731,741
1911 ...	2,646,730	740,428	518,857	3,906,015
1912 ...	2,382,967	781,101	752,531	3,916,599

* Period from 1st March to 30th June, 1901. † Including telephone revenue. ‡ Included in telegraph revenue.

The following table gives an analysis of the gross earnings of the Postal Department in each State and in the Commonwealth during the year ended 30th June, 1912:—

ANALYSIS OF GROSS REVENUE OF POSTAL DEPARTMENT, 1911-12.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
	£	£	£	£	£	£	£
Postage ...	815,501	602,994	282,712	178,181	134,976	81,800	2,096,164
Telegraphs ...	262,611	152,997	140,571	111,371	90,841	22,710	781,101
Telephones ...	305,199	216,491	96,054	60,526	51,714	22,547	752,531
Money order commission ...	48,490	28,785	16,421	8,352	13,780	5,237	121,065
Poundage on postal notes ...	9,154	4,720	4,788	2,234	1,890	1,002	23,788
Private boxes and bags ...	45,631	33,755	23,377	19,969	13,629	5,589	141,950
Miscellaneous ...							
Total ...	1,486,586	1,039,742	563,923	380,633	306,830	138,885	3,916,599

21. Expenditure in respect of the Postal Departments.—The subjoined table shews the total expenditure in respect of the Postal Department in the Commonwealth for each of the years ended 30th June, 1902 and 1907 to 1912 inclusive. The figures given include certain items of expenditure, such as rent, repairs and maintenance of buildings, fittings and furniture, sanitation, water supply, new buildings and additions, which are under the control of the Department of Home Affairs, and interest on transferred properties.

TOTAL EXPENDITURE IN RESPECT OF POSTAL DEPARTMENT, 1901-2 and 1907-12.

Year.	1902-3.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
Expenditure £	2,568,846	2,966,099	3,345,841	3,611,678	3,786,756	4,343,231	5,345,803

The following table shews the distribution of expenditure on various items in each State during the year ended 30th June, 1912 :—

DISTRIBUTION OF EXPENDITURE OF POSTAL DEPARTMENTS, 1911-12.

Particulars.	Central Office.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
	£	£	£	£	£	£	£	£
Salaries and Contingencies—								
Salaries	13,734	732,033	493,797	231,825	173,383	186,566	63,446	1,894,785
Conveyance of mails		276,726	136,239	161,864	75,002	67,543	41,530	758,964
Contingencies	4,793	344,406	240,479	170,096	79,350	106,237	41,471	986,832
Cables	20,092	...	...	...	...	...	...	20,092
Ocean mails	170,000	...	...	...	...	...	...	170,000
Vancouver mails	6,145	...	...	...	...	...	...	6,145
Miscellaneous	513	975	616	1,458	303	2,024	287	6,076
Pensions & Retiring Allowces		15,548	15,578	2,647		3,121		36,894
Rent, Repairs, Maintenance	1,254	32,182	19,922	6,717	5,392	5,148	1,908	72,523
Supervision of Works		4,274	658	983	1,284	1,146	85	8,430
Proport'n of Audit Office exps.		1,061	864	394	267	286	122	2,894
Unforeseen expenditure	58	105	199	48	15	44	40	509
New Works—								
Telegraph and Telephone		269,402	320,874	123,433	58,125	72,708	19,065	863,607
New Buildings, etc.		47,693	15,661	7,227	14,731	18,254	1,167	104,733
Interest at 3 per cent. for 2 years on transferred properties		140,266	79,741	55,454	50,343	29,947	12,894	368,645
Purchase of Sites*	44,674	...	...	...	...	...	...	44,674
Total	261,263	1,864,571	1,324,688	762,147	458,195	492,924	182,015	5,345,803

* Particulars of apportionment to each State not yet available.

22. Royal Commission on Postal Services.—On 22nd June, 1908, a Royal Commission was appointed to report upon the Postal, Telegraphic, and Telephonic Services of the Commonwealth, and more particularly in relation to the following matters :—(a) Management; (b) Finance; (c) Organisation, including discipline; (d) Extensions in country districts, and particularly in remote or sparsely-populated parts of the Commonwealth; and (e) Complaints in relation to the services. The inquiry was commenced in July, 1908, and occupied 228 sittings. The Commissioners visited every State and took evidence at each State capital and also at Fremantle, Kalgoorlie, and Launceston. In addition, personal visits of inspection were made to all the General Post Office buildings and many branch telephone exchanges and suburban post-offices of Sydney and Melbourne. The number of witnesses examined by the Commissioners was 190, including representatives of public and commercial institutions, experts, and prominent members of the Commonwealth Public Service. Recommendations numbering 175 were made by the Commission in a report laid before Parliament on 30th September, 1910. These refer to a great variety of subjects and matters, but owing to exigencies of space particulars in regard thereto cannot be given in this publication.

§ 2. Telegraphs.

1. First Lines Constructed.—The electric telegraph was first introduced into Australia for use by the public in the year 1854, when a line from Melbourne to Williamstown was opened. The first line in South Australia, from Adelaide to Port Adelaide, was opened in 1856, while the first line in New South Wales was brought into operation in 1858, when the line from Sydney to Liverpool, twenty-two miles in length, was opened. In Tasmania the first telegraphic line was completed in 1857, while in the following year communication was established between Sydney, Melbourne, and Adelaide. The first line to be constructed in Queensland was that between Brisbane and Rockhampton,

a distance of 396 miles, which was opened in 1864. In Western Australia the first telegraph constructed was from Perth to Fremantle, a distance of twelve miles, which was brought into use in 1869, and in the same year the cable joining Tasmania with the continent of Australia was completed.

2. Development of Services.—During the period from 1871 to 1881 great progress was made throughout Australia in the way of telegraphic construction, over 14,000 miles of line, exclusive of railway telegraph lines, being opened for use during the period, mentioned, making the total length of the line open at the end of the year 1881, 25,470 miles. In the case of South Australia this increase was to a large extent due to the construction of the transcontinental lines (a) from Adelaide to Darwin (a distance of 2230 miles), which was completed on the 22nd August, 1872, at a cost of nearly half a million sterling, and (b) from Port Augusta to Port Lincoln, and thence along the coast of the Great Australian Bight as far as Eucla, on the Western Australian border. In Queensland there was a large increase resulting from the construction of the line to Normanton, on the Gulf of Carpentaria, while in Western Australia the line from Perth to Albany was extended as far as Eucla on the 9th December, 1877, thus establishing telegraphic communication between the six capital towns, Brisbane, Sydney, Melbourne, Adelaide, Perth, and Hobart. At the present time the systems of telegraph lines throughout Australia are well developed. The longest line extends from Thursday Island, in Torres Straits, by submarine cable to Paterson, on the mainland of Cape York Peninsula; from Paterson the line runs in a southerly direction as far as Brisbane, where it joins the main interstate line to Sydney, Melbourne, and Adelaide; from Adelaide it runs to Port Augusta, then on to Port Lincoln, on Eyre's Peninsula, and thence to Eucla, on the Western Australia boundary; from Eucla the line extends along the coast of the Great Australian Bight to Albany, and thence it runs adjacent to the west coast of Western Australia as far as Onslow, *via* Perth, Geraldton, and Carnarvon. From Onslow connection extends to Broome, in Roebuck Bay, from which place communication is made to Singapore by the Eastern Extension Company's cable. From Roebuck Bay the line crosses the Kimberley district in an easterly direction, and then runs north as far as the terminus at Wyndham. In Queensland a line runs to Burketown, near the coast of the Gulf of Carpentaria, *via* Normanton; another line extends to Cloncurry and Urandangi, in the extreme west of the State. Branch lines extend to all important coastal and inland towns, while considerable networks of lines converge from the country districts towards the centres of population. From Adelaide the transcontinental line, referred to above, runs in a northerly direction to Darwin, from which place communication is provided with Europe by submarine cable by way of Batavia, Singapore, and Madras. In Western Australia a line runs from Eucla to the Coolgardie goldfields *via* Balladonia and Dundas, and from Coolgardie communication is provided with Perth and with Sir Samuel, in the East Murchison district.

3. Number of Telegraph Offices and Length of Lines and Wire Open.—The following table shews the number of telegraph offices and the length of telegraphic lines and of telegraph wire, exclusive of railway telegraphs, available for use in the Commonwealth at the end of the year 1901, and from 1907 to 1911 inclusive:—

NUMBER OF TELEGRAPH OFFICES, LENGTH OF LINE AND WIRE, AVAILABLE FOR USE, 1901 and 1907-11.

Particulars.		1901.	1907.	1908.	1909.	1910.	1911.
No. of Offices	No.	2,567	3,211	3,445	3,597	3,883	4,041
Length of Line	miles*	41,951	43,384	43,455	43,849	43,657	44,013
Wire	†	101,708	85,173	90,646	92,909	96,825	97,053

* Including telephone and railway telegraph lines in New South Wales, up to and including 1908, and including railway telegraph lines in South Australia up to and including 1905. † Including telephone and railway telegraph wires in New South Wales up to and including 1906, and including railway telegraph wires in South Australia up to and including 1905.

The following table gives corresponding particulars for each State for the year 1911. The figures are exclusive of railway telegraphs:—

NUMBER OF TELEGRAPH OFFICES, LENGTH OF LINE AND WIRE IN EACH STATE, 1911.

Particulars.		N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
No. of Offices	No.	1,406	987	639	390	353	266	4,041
Length of Line	miles	15,057	4,055	10,568	5,713	6,914	1,706	44,013
„ Wire	„	31,123	12,420	23,525	14,149	12,229	3,607	97,053

4. **Revenue and Expenditure.**—Particulars as to the revenue from the telegraph systems for the years 1901 and 1907-12 are given on page 765, while particulars as to the expenditure on telegraph works for the year 1910-11 are given on page 766.

5. **Number of Telegrams Despatched.**—The following table shews the total number of telegrams despatched in the Commonwealth in 1901 and in each of the years 1907 to 1911 inclusive:—

NUMBER OF TELEGRAMS DESPATCHED, (,000 OMITTED), 1901 and 1907-11.

Year	1901.	1907.	1908.	1909.	1910.	1911.
Number*	8,003	10,893	11,324	11,345	12,238	12,821

* Including interstate cablegrams.

The following table shews the number of telegrams despatched in each State in 1911 for delivery in that State, and the number despatched in each State for delivery in other States, and also the total number of telegrams—exclusive of cablegrams—despatched in each State:—

NUMBER OF TELEGRAMS DESPATCHED IN EACH STATE, 1911 (,000 OMITTED).

State, etc.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Inland (counted once)	3,420	2,018	1,772	898	1,432	240	9,780
Interstate*	894	791	464	396	350	146	3,041
Total	4,314	2,809	2,236	1,294	1,782	386	12,821

* Including interstate cablegrams.

6. **Rates for Transmission of Telegrams.**—The present rates for the transmission of telegrams within the Commonwealth were fixed by section 7 of the Post and Telegraph Rates Act 1902, and came into force on the 1st November, 1902. Under this Act charges are made for telegrams according to whether they are “ordinary” or “press” telegrams. “Press” telegrams are defined to mean those the text of which consists of political, commercial, etc., information, and of news intended for publication in a newspaper. The telegram must be sent by an authorised correspondent, and must be addressed to a registered newspaper or recognised news agency. The subjoined tables shew the scales of charges:—

SCALE OF CHARGES FOR ORDINARY TELEGRAMS, 1912.

Particulars.	Town and Suburban, within Prescribed Limits, or within 15 Miles from the Sending Station.	Other Places within the State, except Town and Suburban.	Interstate.
	s. d.	s. d.	s. d.
Including address and signature—			
Not exceeding 16 words	0 6	0 9	1 0
Each additional word	0 1	0 1	0 1

Double the foregoing rates are imposed for the transmission of telegrams on Sunday, Christmas Day, and Good Friday, and between the hours of 8 p.m. and 9 a.m., and for telegrams sent on "urgent" forms.

SCALE OF CHARGES FOR PRESS TELEGRAMS, 1912.

Particulars.	Within any State.	Interstate.	Relating to Parlia- mentary, Executive, Departmental, and other Common- wealth Proceedings as may be prescribed.
	s. d.	s. d.	s. d.
Not exceeding 25 words	0 6	1 0	...
From 26 to 50 words	0 9	1 6	...
From 51 to 100 words	1 6	3 0	...
Every additional 50 words	0 6	1 0	...
Within the Commonwealth.			
Not exceeding 25 words			1 0
From 26 to 100 words			1 6
Every additional 50 words			0 6

7. **Wireless Telegraphy.**—Under the Wireless Telegraphy Act 1905 the Postmaster-General is given the exclusive privilege of establishing and using stations and appliances for receiving and transmitting messages by wireless telegraphy within Australia. While he is empowered to grant licenses to establish and use stations and appliances for wireless telegraphy, the only licenses so far issued have been for experimental work. The Act does not apply to ships belonging to the King's Navy. Viewing the insular position of Australia, it was evident that, for an effective system of radio-telegraphic communication to be given, not only must the service offered be continuous, but the distances separating the stations must to a great extent be governed by the normal working range of the vessels with which communication would have to be established. With this object in view, up to the end of 1912 approval was given by the Commonwealth Government for the construction and erection of nineteen stations at or near the following localities:—Port Moresby, Thursday Island, Cooktown, Townsville, Rockhampton, Brisbane, Sydney, Gabo Island, Melbourne, Hobart, Mount Gambier, Adelaide, Esperance, Perth, Geraldton, Broome, Roeburne, Wyndham, and Darwin. In February, 1912, the first official wireless station was opened at Melbourne, and since then stations have been opened for the transaction of public business at Perth, Adelaide, Sydney, Brisbane, Hobart, Mount Gambier, Thursday Island, Port Moresby, Rockhampton, Geraldton, and Esperance; while the stations at the other localities named will probably be completed by the end of June, 1913. It is intended eventually to increase the number of stations to thirty-two. To complete the external scheme of radio-telegraphic communication, and so form the Australian unit of the Imperial

scheme, high power stations were essential. The stations at Sydney and Perth are of this nature, the former city being capable of communication with New Zealand and the radio-telegraphic stations in the Pacific, and the latter with Cocos Island. A third high power station is in course of erection at Darwin, and will operate with Singapore and the Islands of the Pacific.

All the other stations are of a lower power, and constitute the internal scheme of inter and ship-to-shore communication. The working range by day—and under unfavourable conditions—of the low power stations is 400 miles; that of the high power stations being 1250 miles, though the installation in course of construction at Darwin will have a day range of over 2000 miles. Under more favourable conditions, however, messages can be transmitted over much greater distances, extending in the case of low power stations to over 1500 miles.

The ordinary ship-to-shore communication rates are 10d. per word, allocated as follows:—6d. for land station, and 4d. for the ship station charge, to which must be added the inland forwarding charge. Between Port Moresby and Thursday Island the rate is 2d. per word plus the inland forwarding rate.

In December, 1909, a conference of representatives of the Commonwealth, New Zealand, the High Commissioner for the Western Pacific, Fiji, the Admiralty, and the Pacific Cable Board was convened at Melbourne to report upon the establishment of wireless telegraphy in the Pacific. The chief recommendations of this Conference were:—(a) That high-power stations be established at Sydney, Doubtless Bay (New Zealand), Suva (Fiji), and Ocean Island, and (b) that medium-power stations be established at Tulagi (Solomon Islands), and Vila (New Hebrides). The total cost of construction of the scheme covered by these recommendations was £42,000, while the total annual cost was estimated at £13,820 for a continuous service, and £9970 for a restricted service. It was proposed to apportion the cost between Great Britain, New Zealand, Fiji, and Australia. These recommendations were adopted by the Commonwealth Government, but the British Government would not agree to the erection of high-power stations at Suva and Ocean Island. Up to the present no further concerted action has taken place, but radio-telegraphic stations have been erected at Suva, Vila and Tulagi, under the control of the High Commissioner of the Pacific, while the New Zealand Government has erected a high-power station at Awanui, in the North Island, and is also proceeding with the construction and erection of stations at the Bluff, Wellington, Gisborne, New Plymouth, and Christchurch.

§ 3. Submarine Cables.

1. First Cable Communication with the Old World.—As far back as 1857 the question of connecting Australia with the old world by means of submarine cables was brought forward in South Australia. No steps, however, were taken in the direction of constructing the cable until the year 1869, when various schemes were proposed. About this time the British Australian Telegraph Company was formed for the purpose of laying a cable to Australia without subsidy or guarantee. Communication had already been provided between London and Singapore *via* Bombay and Madras, and also through Java from Batavia to Banjoewangie. The proposal of the above company was to lay cables from Singapore to Batavia, and from Banjoewangie to Port Darwin, from which place connection would be made overland with the Queensland telegraph system at Normanton. It was, however, subsequently decided that the company's line should end at Port Darwin, the South Australian Government undertaking to construct an overland line from Port Augusta to Port Darwin, a distance of 1971 miles. In November, 1871, the submarine cable was completed, and communication was established between Port Darwin and London. On the 22nd August, 1872, the construction of the line from Port Darwin to Adelaide was accomplished at an expenditure of nearly £500,000. The cable from Port Darwin is now under the control of the Eastern Extension Telegraph Company.

2. **The Tasmania-Victoria Cables.**—In the meantime the cable joining Tasmania to the continent of Australia had been laid, and was open for use in 1869, the total length being 170 miles. The line was owned by the Eastern Extension Telegraph Company, and was subsidised by the Tasmanian Government until the year 1909. On the 28th February, 1908, the Postmaster-General entered into an agreement with Messrs. Siemens Brothers and Company Ltd., of London, for the manufacture and laying of two submarine cables between Tasmania and Victoria. The new cables were taken over on the 24th March, 1909, and opened to the public on the 1st May, 1909, the day following the expiration of the agreement with the Eastern Extension Company. Their aggregate length is approximately 350 nautical miles of main cable, and 20 nautical miles each of intermediate and shore-end cable, making a total of 390 nautical miles. The contract price was £52,447.

3. **The Eastern Extension Company's Cables.**—In addition to the first Victoria-Tasmania cable and the original cable from Port Darwin referred to above, the Eastern Extension Company has constructed several other cables connecting with various places in the Commonwealth. (a) In 1879 the original cable *via* Banjoewangie was duplicated, the States of New South Wales, Victoria, South Australia, Western Australia and Tasmania having agreed to pay the above company a subsidy of £32,400 per annum for a period of twenty years, the amount to be divided between the States on a population basis. (b) In 1881 a cable was constructed connecting Broome, in Roebuck Bay, W.A., with Banjoewangie; from Broome there is direct telegraphic communication with Perth, from which place communication is made with the Eastern States by the interstate line *via* Albany, Eucla, and Port Augusta. (c) In July, 1899, the company offered to lay a cable direct to Great Britain *via* the Cape of Good Hope, and also offered reductions in the rates charged, if the States would agree to certain conditions giving the company the right of direct dealing with the public. The States of South Australia, Western Australia and Tasmania accepted the terms offered, and New South Wales entered into the agreement in January, 1901. The cable was opened *via* Fremantle and Durban in October, 1901. (d) Another submarine cable from Fremantle to Adelaide forms an alternative line of communication between the eastern States and Western Australia. (e) There is an alternative route, partly belonging to the Eastern Extension Company and connecting the Port Darwin-Singapore cable with London, *via* Hong Kong, Shanghai, Possiet Bay (Pacific Russia), Libau (Russian Baltic), and Newbiggin (England). (f) In 1909 a cable was laid from Java to Cocos Island, thus affording another route from Australia to South Africa, whilst in April, 1911, a radio-telegraphic station was opened at Cocos Island, thus strengthening the line of communication between Australia and the East.

4. **The Pacific Cable.**—In July, 1898, a conference of representatives of Great Britain, Canada, New South Wales, Victoria, Queensland, South Australia and New Zealand was held for the purpose of considering a project for a cable to be laid across the Pacific Ocean, touching only British territory on its way from Australia to Canada, thus providing an "All Red" route, as it is termed, for a cable system between England and Australia. In the following year it was agreed at a meeting held by representatives of the countries interested that the cable should be laid and that Great Britain and Canada should each pay five-eighteenths of the cost, and the States of New South Wales, Victoria, Queensland, and the Dominion of New Zealand should each pay one-ninth. The construction and management of the cable were placed under the control of a Board composed of seven members—two each from Great Britain, Canada, and Australia, and one from New Zealand—called the Pacific Cable Board. The Australian shore-end of the cable was landed at Southport, Queensland, in March, 1902, and the cable was completed on the 31st October, 1902, and opened for traffic on the 7th December of the same year. There are cable-stations at Norfolk Island, Fiji, and Fanning Island, and a branch cable runs from Norfolk Island

to New Zealand. In 1910 the Board leased a wire from Bamfield, British Columbia, to Montreal, thus extending the Pacific cable system from Queensland to Montreal. The traffic is then carried across the Atlantic to the United Kingdom by the cables of the Anglo-American and Commercial Companies. The following table shews particulars of the revenue, expenditure, total loss, and the proportion of the loss payable by the Commonwealth for each financial year since the opening of the cable:—

**REVENUE, EXPENDITURE, AND LOSS ON WORKING OF PACIFIC CABLE,
1903 to 1911.**

Year ended the 31st March.	Revenue.	Expenditure (in- cluding Annuities and Renewal Fund).	Loss.	Commonwealth Proportion of Loss. *
	£	£	£	£
1903	...	...	90,518	30,172
1904	80,118	167,869	87,751	30,514
1905	87,446	163,296	75,850	29,250
1906	91,952	164,508	72,556	25,290
1907	113,516	167,439	53,923	24,221
1908	110,160	172,523	62,363	18,336
1909	113,093	173,981	60,888	20,797
1910	111,724	171,312	59,588	20,307
1911	138,678	186,888	48,210	19,863
1912	159,150	199,649	40,499	16,070

* To 30th June in each year.

The total cost of construction to the 31st March, 1911, was £1,996,703, originally paid by Great Britain. The proportions of this cost payable by the other countries are to be paid off by 50 annual instalments. The total amount of the annuity paid to Great Britain during the year 1911-12 was £77,545, while the amount paid to the renewal fund was £32,350.

5. New Zealand Cables.—A submarine cable joining New Zealand to the Australian Continent was laid in 1876. The line is 1191 miles in length. The Australian shore-end of the cable is at Botany Bay, while the New Zealand terminus is at Wakapuaka, near Nelson, in the Middle Island, from which place another cable, 109 miles in length, is laid to Wanganui, in the North Island. For a period of ten years after its opening the cable was subsidised by the New South Wales and New Zealand Governments, the total contributions amounting to £10,000 a year. The branch from Norfolk Island to New Zealand of the Pacific cable was opened on the 23rd April, 1902. The length of this cable is 597 miles, the New Zealand terminus being at Doubtless Bay in the north of the North Island. During 1911 a scheme to lay a second cable between New Zealand and Australia (Auckland to Sydney) was adopted by the various Governments concerned, and the necessary machinery legislation was passed. The new cable will have the effect of shortening the distance between the two Dominions and will also improve the connection between Australia and Canada by reducing by two the number of transmitting stations.

6. The New Caledonian Cable.—In April, 1892, a French company, known as the Compagnie Française des Câbles Télégraphiques, entered into an agreement with the French, the New South Wales, and the Queensland Governments to lay down a submarine cable between New Caledonia and Queensland in return for guarantees by the French Government to the extent of £8000, and by the Governments of New South Wales and Queensland to the amount of £2000 each annually for a period of thirty years. The cable was opened for use in October, 1893, the Australian shore-end being at Bundaberg. The guarantees of the Governments of New South Wales and Queensland have now been transferred to the Commonwealth Government.

7. **Number of Cablegrams Received and Despatched.**—The subjoined table shews the number of cablegrams received and despatched in the Commonwealth from 1909 to 1911:—

CABLEGRAMS RECEIVED AND DESPATCHED, COMMONWEALTH, 1909-11.

Particulars.	Cablegrams Received.			Cablegrams Despatched.			Total Cablegrams Received and Despatched.		
	1909.	1910.	1911.	1909.	1910.	1911.	1909.	1910.	1911.
Number... ..	221,442	241,723	256,912	231,701	254,666	271,540	453,143	496,389	528,452

The following table shews the total number of cablegrams received and despatched in each State during the year 1911. The figures given are exclusive of interstate cablegrams, which are classed as interstate telegrams (see § 2 hereof):—

NUMBER OF CABLEGRAMS RECEIVED AND DESPATCHED IN EACH STATE, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.*	C'wealth.
Number received ...	123,910	84,129	10,574	18,219	13,985	6,095	256,912
„ despatched...	129,809	86,264	13,318	17,217	18,548	6,384	271,540
Total	253,719	170,393	23,892	35,436	32,533	12,479	528,452

* Exclusive of interstate cablegrams, which are included with interstate telegrams (see § 2 ante).

8. **Lengths of Cable Routes.**—The following table gives the lengths of various cable routes:—

LENGTHS OF CABLE ROUTES.

Via Roebuck Bay.		Via Darwin.		Via South Africa.	
	Miles.		Miles.		Miles.
Perth to Roebuck Bay ...	1,485	Adelaide to Darwin ...	2,134	Perth to Mauritius ...	4,417
Roebuck Bay to Banjoewangie ...	970	Darwin to Banjoewangie ...	1,150	Mauritius to Durban ...	1,786
Banjoewangie to London ...	9,841	Banjoewangie to London ...	9,841	Durban to Cape Town ...	800
				Cape Town to Madeira ...	5,715
				Madeira to Penzance ...	1,341
				Penzance to London ...	260
Total	12,296	Total	13,125	Total	14,319

Via Vancouver.		Via Russia.	
	Miles.		Miles.
Southport (Queensland) to Norfolk Island ...	963	Sydney to Darwin ...	2,992
Norfolk Island to Suva (Fiji) ...	1,129	Darwin to Hong Kong ...	4,237
Suva to Fanning Island ...	2,351	Hong Kong to Possiet Bay ...	2,647
Fanning Island to Bamfield (Canada) ...	3,980	Possiet Bay to Libau ...	6,399
Across Canada ...	3,450	Libau to Newbiggin (England) ...	1,657
Canada to Ireland ...	2,450		
Total	14,323	Total	17,992

9. **Cable Rates.**—In 1872 the cable rate to England was nine guineas for twenty words, but when word rates were brought into general use in 1875, the rate between Great Britain and Australia was fixed at ten shillings and sixpence, subsequently altered to ten shillings and eightpence. In 1886 the Eastern Extension Telegraph Company reduced the rate to nine shillings and fourpence a word for ordinary messages, to seven shillings and a penny for Government messages, and to two shillings and eightpence a word for press messages. At a conference of the postal and telegraphic authorities held in March, 1891, the proposal to reduce the rates to four shillings a word for ordinary messages, three shillings and eightpence for Government, and one shilling and tenpence for press messages was agreed to, the States of New South Wales, Victoria, South Australia, Western Australia, and Tasmania undertaking to make good half the loss which the Eastern Company might suffer through such reductions. The States guaranteed to the company one-half of the amount of receipts short of the sum of £237,736—the amount received by the company in 1889 in respect of cable charges—the other half to be borne by the company. The Government of South Australia was also guaranteed by the other contracting States against any loss to the revenue which the lower cable rates might cause in the working of the overland lines. Queensland subsequently joined the other States in these guarantees. In 1893, however, owing to the heavy losses incurred, the rates for ordinary messages were increased to four shillings and ninepence per word, and at the same time New Zealand joined the guarantees to the company and to South Australia.

(i.) *Present Rates to Great Britain.* On the acceptance by three of the States of the terms offered by the Eastern Extension Telegraph Company for the construction of a cable *via* South Africa the rate for ordinary messages was reduced in May, 1900, to four shillings a word. It was further reduced to three shillings and sixpence in January, 1901, and to three shillings in January, 1902, at which amount the standard rate by all routes for cablegrams to Great Britain has since remained. The scale of reductions is governed by a revenue standard, and when the latter averages £330,000 per annum a further reduction to two shillings and sixpence will be made. In July, 1909, the "through" charge for press cables was reduced from one shilling to ninepence per word.

(ii.) *Deferred Cablegrams.* With a view to affording additional cable facilities and to keeping the Pacific cable fully occupied during the whole twenty-four hours, proposals were made by the Postmaster-General's Department for the adoption of a system of deferred cablegrams, *i.e.*, for cablegrams to be delivered after a lapse of twenty-four hours at reduced rates of one shilling and sixpence per word for cablegrams in code, and one shilling per word for cablegrams in plain language. A meeting of representatives of the Administrations and companies concerned was held in London in November, 1910, and the new rates came into force on the 1st January, 1912. Messages can only be transmitted after non-urgent private cablegrams and press cablegrams. Those which have not reached their destination within a period of twenty-four hours from the time of handing in are transmitted in turn with cablegrams charged full rate. They may be sent *via* the Pacific or Eastern routes to all countries to which the ordinary rate exceeds tenpence per word.

On the 15th December, 1911, a system of deferred press cablegrams between Vancouver and Australia was instituted. The rate charged is one penny three-farthings per word, and the conditions of despatch are the same as those for private deferred cablegrams.

(iii.) *Rates to New Zealand.* As a result of the completion of the New Zealand branch of the Pacific cable in 1902, the rates charged for cablegrams between Australia and New Zealand, except to and from Tasmania, were uniformly reduced to fourpence-halfpenny per word. Between New Zealand and Tasmania the charge was fixed at

fivepence-halfpenny a word, but it has since been reduced to fourpence-halfpenny. The charge for ordinary cablegrams from New Zealand to Great Britain was reduced from the 1st June, 1902, from five shillings and twopence to three shillings and fourpence a word, and has since been further reduced to three shillings a word.

10. Subsidised Press Cable Service.—In October, 1909, a Select Committee of the Commonwealth Senate was appointed to report upon the question of the supply, conditions of sale, and distribution, which control the Press Cable Service within and from outside the Commonwealth. A majority report of this Committee was issued in December, 1909, and recommended (a) the completion of an "All Red" cable route *via* Canada, (b) the conditional subsidisation of a press cable association, (c) the utilisation of the High Commissioner's office for the dissemination in Australia of Empire news, and (d) the amendment of the Copyright Act in regard to cables.

In accordance with the recommendations of this Committee the Commonwealth has granted a subsidy of £6000, extending over a period of three years, to the Independent Press Cable Service, on the conditions that at least 6000 cable words are supplied each week, to be sent *via* Pacific, and that any newspaper proprietary in the Commonwealth is permitted to become a subscriber at rates approved by the Government.

11. Cable Subsidies paid by each State.—The agreement between the State Governments and the Eastern Extension Telegraph Company expired on the 30th April, 1900. Since the year 1895 the amounts guaranteed—£237,736 to the company and £37,552 to South Australia—have been met by the receipts, and the contracting States have, therefore, not been called upon to contribute.

(i.) *Total Subsidies Paid.* The following table shews the total amounts paid by way of cable subsidies for the years 1906-7 to 1911-12:—

TOTAL AMOUNT OF CABLE SUBSIDIES PAID, 1906-12.

Year.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
Amount	33,035	29,963	30,141	24,307	24,978	20,092

(ii.) *Subsidies Paid by each State.* The total amount of cable subsidies paid prior to the year 1910 included the subsidy paid in respect of the Tasmania-Victorian cable service, which in 1908-9 amounted to £11,265.

As the agreement in connection with the Tasmanian cable expired in 1909, and as new cables have been laid by the Commonwealth Government (see page 771 *ante*), the guarantees were, in the course of the year 1910, reduced to those in connection with the New Caledonia and Pacific cables. The amount of cable subsidies paid by the Commonwealth in 1911-12 was £4022 in respect of the New Caledonian cable guarantee, and £16,070 in respect of the loss on the Pacific cable.

§ 4. Telephones.

1. Development of Telephone Services.—The Postal Department has established telephone services in all the capital towns and in many of the important centres of population throughout the Commonwealth. Particulars as to the revenue from telephone services in each State for the years 1901 and 1907-12 are given on page 765 *ante*, while particulars of the expenditure on telephone works in each State for the year 1910-11 are given in a table on page 766.

(i.) *Number of Telephone Exchanges, etc., in Commonwealth.* The following table shows the number of telephone exchanges, the number of telephone connections, and the length of telephone wire, exclusive of telegraph and railway telephone wire, in the Commonwealth at the end of the year 1901 and from 1907 to 1911 inclusive:—

**NUMBER OF TELEPHONE EXCHANGES AND CONNECTIONS AND LENGTH OF WIRE,
1901 and 1907-11.**

Particulars.	1901.	1907.	1908.	1909.	*1910.	*1911.
Telephone Exchanges ... No.	119	226	285	328	678	927
„ Connections ... „	24,583	47,205	54,512	62,091	74,975	85,458
Length of Wire ... miles	47,276	119,052	145,572	166,489	220,174	282,498

* Including all places at which two or more subscribers are connected and which are now classified as "telephone exchanges." Prior to 1910 the classification in the several States was not uniform.

(ii.) *Number of Telephone Exchanges, etc., in each State.* The following table gives corresponding particulars for each State at the end of 1911:—

**TELEPHONE EXCHANGES, CONNECTIONS, AND LENGTH OF WIRE IN EACH STATE,
1911.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
Tel. Exchanges* No.	353	238	191	82	62	61	927
„ Connections „	34,551	23,504	10,242	6,086	8,404	2,671	85,458
Length of Wire miles	101,240	115,740	25,328	17,147	19,975	3,068	282,498

* See note to previous table.

2. Telephone Rates.—The charges mentioned in the table hereunder are payable for the different classes of telephone services specified therein:—

TELEPHONES.—RENTAL CHARGES, 1911-12.

In Telephone Networks having a Population of—	Radius of Network with Main Exchange as Centre.	Minimum Annual Charge—		
		For an Exclusive Service.	For each Subscriber or Instrument on a Two-party Line.	For each Subscriber or Instrument on a Three or more party Service.
	Miles.	£ s. d.	£ s. d.	£ s. d.
From 1 to 10,000 ...	5	3 0 0	2 10 0	2 0 0
„ 10,001 to 100,000 ...	10	3 10 0	2 15 0	2 5 0
„ 100,001 upwards ...	10	4 0 0	3 0 0	2 10 0

It is provided that for all effective calls originated the subscriber will be charged the following rates:—(a) For calls not exceeding 2000 half-yearly, two calls for one penny; and (b) for calls above 2000 half-yearly, three calls for one penny.

Another regulation permits persons occupying offices in the same building, or occupying the same private residence, to subscribe jointly under one exchange number (in addition to rental as for one person at the respective rates prescribed) on payment of

£1 per annum for each additional subscriber. This fee covers the insertion of the additional subscriber's name in the telephone list. If additional instruments are required the subscribers must pay the rates prescribed for party lines.

3. Miscellaneous Particulars.—The following table gives various interesting particulars of the operation of the telephone services in each State for the year 1911 :—

PARTICULARS OF OPERATION OF TELEPHONE SERVICES, 1911.

Particulars.		N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
Telephone Exchanges*	No.	353	238	131	82	62	61	927
Public Telephones†	No.	722	613	291	322	203	293	2,444
Extension Lines—								
Metropolitan	No.	4,616	4,767	727	418	1,313	71	11,912
Country	No.	823	905	658	94	326	96	2,902
Total	No.	5,439	5,672	1,385	512	1,639	167	14,814
Private Lines—								
Metropolitan	No.	501	307	39	238	161	71	1,317
Country	No.	442	218	129	101	53	26	969
Total	No.	943	525	168	339	214	97	2,286
Connections—								
Central Exchange	No.	7,028	7,729	3,202	3,922	2,457	1,185	25,523
Suburban Exchanges	No.	15,448	9,077	799	943	1,426	75	27,768
Country Exchanges	No.	12,075	6,698	6,241	1,076	2,652	1,323	30,065
Total	No.	34,551	23,504	10,242	5,941	6,535	2,583	83,356
Telephone instruments in use—								
Subscribers' instruments	No.	40,313	29,139	12,086	8,298	7,885	3,038	...
Trunk Line	No.	1	1,033		256	196	355	...
All other	No.	2,719	645		342	377	180	...
Total	No.	43,032	30,817	12,086	8,896	8,458	3,573	106,862
Rental received‡	£	11	140,530	59,131	42,739	40,416	10,037	\$292,853
Length of wire opened during year... Miles		18,221	32,289	3,132	3,927	4,710	351	62,630
Total length of wire at end of year... Miles		101,240	115,740	25,328	17,146	19,975	2,068	281,497
Total cost to end of year	£	1,097,659	868,626	371,489	310,879	242,877	95,615	2,987,145

* See note to first table on previous page. † Comprises slot machines within telephone networks. The information furnished under this heading for 1909 (see Year Book No. 4, page 793) included public telephone stations, i.e., trunk line offices. The latter have now been omitted, as it is thought that they do not rightly come under the heading of "public telephones." ‡ For the year ended 30th June, 1911. § Not available. ¶ Exclusive of New South Wales.

In 1911 the mileage of telephone cables (aerial and underground) was 1363, the length of telephone conduits in duct miles 781.38, whilst the mileage of telephone tunnels was 12.21. The total mileage of telephone trunk lines for the Commonwealth for the same period was 39,087, of which number 12,256 were composed of single wire circuits, 8101 metallic circuits, and 18,730 superimposed circuits.

4. Financial Position of Telephone Branch.—In 1909 an investigation into the financial position of the telephone branch of the Postmaster-General's Department was commenced, and in December of that year a report was issued dealing with the telephone accounts of the system in the State of Victoria. This report shews that during each of the years 1901 to 1908 there was a profit on the working of the system, amounting in all to £150,580; in the financial year 1908-9 there was a loss of £7789, giving a net profit up to the 30th June, 1909, of £142,791.

SECTION XIX.

COMMONWEALTH FINANCE.

§ 1. General.

1. Financial Provisions of the Constitution.—The main provisions of the Constitution relating to the initiation and development of the financial system of the Commonwealth are those contained in Chapter IV., "Finance and Trade," being sections 81 to 105 of the Constitution Act. Two other sections which have a most important bearing on questions of Commonwealth finance are sections 69 and 51.

2. Departments Transferred or Transferable under Constitution.—In section 69 it is provided that the Departments of Customs and Excise in each State should become transferred to the Commonwealth on its establishment, and that on a date or dates to be proclaimed by the Governor-General after the establishment of the Commonwealth the following departments should become transferred:—

- (i.) Posts, telegraphs, and telephones.
- (ii.) Naval and military defence.
- (iii.) Lighthouses, lightships, beacons and buoys.
- (iv.) Quarantine.

Under proclamation dated 12th February, 1901, and published in the Commonwealth *Gazette* of the 14th of that month, the Departments of Posts, Telegraphs, and Telephones in each State became transferred to the Commonwealth as from the 1st March, 1901, while under a similar proclamation dated 19th February, 1901, and gazetted on the 20th, the Departments of Naval and Military Defence in each State also became transferred to the Commonwealth as from 1st March, 1901. In the case of Quarantine, an Act (No. 3 of 1908) has been passed and control has been tentatively assumed by the Commonwealth.

The requisite proclamation of transfer has not yet been made in the case of departments dealing with "Lighthouses, lightships, beacons, and buoys," although legislation relative thereto has been passed by the Federal Parliament (Act No. 14, 1911). It is probable that the proclamation will be made at an early date.

3. Departments Transferable by Means of Commonwealth Legislation.—In addition to the departments here mentioned which pass to the Commonwealth either automatically or by proclamation, there are several others whose duties the Commonwealth is empowered to undertake after the passing by the Commonwealth of the legislation necessary to authorise the assumption of such duties. These are referred to in section 51 of the Constitution, which contains a statement of all matters respecting which power is (subject to the Constitution) conferred on Parliament "to make laws for the peace, order and good government of the Commonwealth." The matters contained in this section include those already mentioned as being covered by section 69. The principal matters involving for the due performance of the duties connected therewith the creation or transfer of departments of the Public Service are:—

- (i.) Trade and commerce.
- (ii.) Taxation.
- (iii.) Bounties on production or export of goods.
- (iv.) Postal, telegraphic, telephonic, and other like services.
- (v.) Naval and military defence.
- (vi.) Lighthouses, lightships, beacons, and buoys.
- (vii.) Astronomical and meteorological.
- (viii.) Quarantine.
- (ix.) Census and statistics.
- (x.) Bankruptcy and insolvency.
- (xi.) Copyrights, patents, and trade marks.
- (xii.) Naturalisation and aliens.
- (xiii.) Marriage.
- (xiv.) Divorce and matrimonial causes.
- (xv.) Invalid and old-age pensions.
- (xvi.) Immigration and emigration.
- (xvii.) Conciliation and arbitration.

4. Commonwealth Departments.—As a result of legislation passed from time to time in accordance with section 51, various departments and sub-departments have been transferred from the States to the Commonwealth, whilst other departments necessary for the due performance of the Commonwealth functions have been brought into existence. In the former class are such departments as those of Patents, Trade Marks, Copyrights, Designs, Naturalisation and Meteorology, while in the latter are the Ministerial Departments of External Affairs, Home Affairs, Treasury, Trade and Customs, Defence, Attorney-General and Postmaster-General, as well as such general departments as Public Service Commissioner's Office, Treasury, Audit Department, Crown Law Department, Bureau of Census and Statistics, Federal Land Tax Office, and Prime Minister's Office. It may, therefore, be said that, so far as its financial aspect is concerned, the effect of Federation up to the present time has been the transfer from States to Commonwealth of the revenue obtainable from the great revenue-producing Departments of Customs and Excise, and of the expenditure connected with various departments whose number is gradually increasing, and that, in addition, the various functions of the Commonwealth have necessitated further new expenditure.

5. Adjustment of Accounts between Commonwealth and States.—The fact that the Departments of Customs and Excise were responsible in the several States for the production of a very large proportion of the total revenues of the States, and that the financial relief afforded to the States by means of the transfer of expenditure to the Commonwealth would not, at least initially, be at all commensurate with this transfer of revenue, naturally led to the inclusion in the Constitution of a provision for the repayment to the States of surplus Commonwealth revenue. The means to be adopted for securing an equitable allocation of such repayment amongst the several States received very extensive consideration at the several conventions at which the framing of the Constitution took place, and the basis ultimately agreed upon was that involving for at least ten years after the establishment of the Commonwealth the provisions of what was generally known as the Braddon clause (section 87), and for at least five years after the imposition of uniform duties of Customs, the scheme of allocation which became known as the "*book-keeping system*." (Sections 89 and 98.)

6. The "Braddon" Clause.—This clause (section 87 of the Constitution) was so called after Sir Edward Braddon, a Tasmanian delegate to the Federal Convention of 1897 and 1898, by whom it was introduced. In its original form the clause provided that for all time the Commonwealth should return to the States not less than three-fourths of the net revenue of the Commonwealth from duties of Customs and Excise, not prescribing, however, what should be returned to *each* State. At the Melbourne session of the Federal Convention, held in 1898, provision was made that surplus revenue, instead of

being returned to a State, might be applied towards the payment of interest on debts of that State taken over by the Commonwealth, and at the Premiers' Conference, held in Melbourne in 1899, a further amendment of the clause was effected by limiting its operations to a "period of ten years after the establishment of the Commonwealth, and thereafter until Parliament otherwise provides." The provisions of this clause *per se* were held to be complied with if the total amount returned to the States as a whole was not less than three-fourths of the total net revenue from Customs and Excise, and the Commonwealth was not under an obligation to return to each State three-fourths of the net Customs and Excise revenue collected in respect thereof. Thus, since the establishment of Federation, although the total amount of surplus Commonwealth revenue distributed amongst the States had in every year except 1907-8, 1908-9, and 1909-10 largely exceeded three-fourths of the total net revenue from Customs and Excise, the amount paid to one of the States, viz., Queensland, in several of these years fell short of three-fourths of the net Customs and Excise revenue collected in respect of that State. This occurred in the years 1901-2, 1903-4, 1904-5, 1907-8, 1908-9, and 1909-10, and was due in a large measure to the heavy expense involved in working the Commonwealth departments in that State. The amount returned to Tasmania for 1907-8, 1908-9 and 1909-10, also fell short of three-fourths of the net Customs and Excise revenue collected in respect of that State, while a similar shortage occurred in the two latter years in Victoria and Western Australia. In 1910-11 the payments to the States were for the first time made upon the new basis which will be treated more fully in paragraph 14.

7. The "Book-keeping System."—The scheme set forth in the Constitution for determining the amount to be paid to the several States was contained in sections 89 and 93, the former of which related to the period prior to the imposition of uniform duties of Customs, the latter to the first five years after the imposition of such duties, and thereafter "until Parliament otherwise provides." The principle involved in this scheme was that of crediting each State with the Commonwealth revenue collected in respect of that State, and of debiting it with the expenditure incurred on its behalf in connection with transferred departments, as well as its share on a *per capita* basis of the new expenditure of the Commonwealth. On this account the method of allocation provided by the Constitution became very generally known as the "*book-keeping system*." As the imposition of uniform duties of Customs and Excise took place throughout the Commonwealth on 9th October, 1901, the five years provided for in section 93 expired on 8th October, 1906, and consequently the "*book-keeping system*," though remaining in force until 30th June, 1910, was liable to be changed at any time by the Commonwealth Parliament. In section 93 provision was made that the duties chargeable on goods imported into one State and consumed in another should be credited to the consuming State, the evident intention being that of safeguarding the interests of such States by allowing to each the revenue which its citizens actually contributed, since presumably the duty ultimately falls upon the consumer. The balance in favour of any State was payable monthly by the Commonwealth.

8. Western Australian Sliding Scale.—Owing to the exceptional circumstances of Western Australia, and the fact that the immediate introduction of interstate freetrade would seriously interfere with the development of the State, through the diminution in the funds at the disposal of its Treasurer, provision was made in section 95 of the Constitution for the retention of interstate duties by Western Australia during the five years after the imposition of uniform duties, such duties to be collected by the Commonwealth. It was stipulated that during the first of these years the duty so imposed on any goods should not exceed the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and that during the succeeding years the amount imposed should not exceed four-fifths, three-fifths, two-fifths, and one-fifth respectively, and should cease at the expiration of the fifth year. This special concession to Western Australia, known as the "*Western Australian Special Tariff*," came to an end on 8th October, 1906, since when trade between all the States has been

free. The amount collected under this special tariff during the five years of its operation from 9th October, 1901, to 8th October, 1906, was as follows:—

DUTY COLLECTED UNDER W.A. SPECIAL TARIFF, 1901-2 to 1906-7.

Year	...	...	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.	Total.
Amount	...	£	201,569	233,467	196,986	142,549	77,666	16,776	868,963

It will be noticed on reference to paragraph 14 hereinafter that by section 5, sub-section (a) of "The Surplus Revenue Act of 1910," a special concession to Western Australia has been granted in the new financial arrangement, similar in principle to the "Western Australian Special Tariff."

9. Special Assistance.—A clause (section 96 of the Constitution) which has a very important bearing on the financial relations of the States and the Commonwealth was inserted by the Premiers' Conference of 1899. This clause provided that the Commonwealth Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit. It is said to have been introduced with the object of rendering the Constitution more elastic in the matter of aid to the States than would be possible if the Braddon clause and the book-keeping system were rigidly adhered to. No claim for such special assistance was made on the part of any of the States up to the year 1911, although it appears that the framers of the clause anticipated that it might be required during the early years of Federation. A claim, however, has now been made by Tasmania, and during the session of 1911 a Royal Commission, which had been constituted to investigate it, issued a report. It recommended a payment to Tasmania of £900,000, spread out over a period of ten years in view of the dislocation of the State finances due to Federation. The Government during the session of 1912 passed an Act granting Tasmania the sum of £500,000, spread out over a period of ten years.

10. Transfer and Consolidation of State Debts.—Under section 105 of the Constitution power is given to the Commonwealth Parliament to take over from the States either the whole of the public debts of the States as existing at the establishment of the Commonwealth, or a proportion of those debts calculated on a population basis, and to defray the interest payable in respect of such debts from the portions of the surplus revenue of the Commonwealth payable to the several States. The prospective savings in the matter of interest to be effected by means of the consolidation of the State debts formed a strong argument in pre-federal days for those supporting the federal movement. A drawback to the scheme provided for in the Constitution lay in the fact that under it the maximum amount of debt which could be assumed by the Commonwealth was slightly more than two hundred millions, as existing at the establishment of the Commonwealth, whereas since that date an addition of upwards of seventy millions has been made to the debts of the States. A "proposed law" to provide for an amendment of the Constitution, allowing the Commonwealth unlimited power to assume States debts, was passed by the Federal Parliament in the session of 1909, and the requisite referendum in connection with the amendment took place at the General Elections on 13th April, 1910, when the proposed law received the endorsement of the electorate. No steps have, as yet, been taken to carry it into effect.

11. Disadvantages of the Book-keeping System.—Under the book-keeping system of regulating the financial relations of the States and Commonwealth an endeavour was made to distribute the surplus revenue in the exact proportion in which it had been contributed by the several States. If these be regarded as States which had merely transferred some of their ordinary functions to the Commonwealth, the crediting each with the revenue received in respect to itself, and debiting it with the expenditure which the administration of Commonwealth affairs on its behalf had occasioned, might be

deemed to be as equitable as any method that could be suggested. There were, however, certain practical objections to such a system, which may be summarised as follows :—

- (i.) The trouble and expense which the necessary record entailed.
- (ii.) The practical impossibility of ensuring that in every case a consuming State would be duly credited with revenue collected on its behalf in a distributing State.
- (iii.) The difficulty involved in equitably determining the amount to be debited to the several States in respect of general Commonwealth expenses.
- (iv.) The uncertainty on the part of the State Governments as to the amount which would become available.
- (v.) The impossibility of securing independent State and Commonwealth finance.

12. Proposals to Modify Book-keeping System.—Various proposals were from time to time made for modifying the “book-keeping” system in such a manner as to obviate certain of its inherent disadvantages. The principal of these proposals were those which may be classified under the following heads :—

- (i.) A *per capita* distribution of surplus.
- (ii.) Payment of a fixed annual sum.
- (iii.) Payment of a fixed annual amount per head.
- (iv.) Increase in liability transferred to Commonwealth.

Some of the proposals that were made involved features of more than one of the systems here specified, and in certain cases combined them with those of the book-keeping system. A dissertation on the merits and demerits of any of the proposals would be beyond the scope of the present publication, but it may be noted that the scheme put forward by Sir George Turner when Commonwealth Treasurer was based on an increase in the liability transferred to the Commonwealth ; that the scheme of Sir John Forrest and that of Sir William Lyne were based mainly on the payment of a fixed annual sum ; while the scheme agreed to by the Commonwealth and State authorities in conference in 1909 and subsequently approved by the Federal Parliament was based on the payment of a fixed annual amount (25s.) per head of population. The scheme finally adopted by Mr. Fisher and ultimately assented to on 2nd September, 1910, retains this fixed annual payment of 25s. per head of population for a period of ten years.

13. Interstate Conferences.—Since the establishment of the Commonwealth, conferences of State Ministers have been held from time to time, at which proposals for adjusting the financial relations between the States and the Commonwealth were considered. At the conference held in Melbourne in October, 1906, and that held in Brisbane in May, 1907, the scheme put forward by Sir John Forrest was very fully discussed, and, in so far as the proposals for the allocation of surplus Commonwealth revenue are concerned, was, with some minor amendments, agreed to. The proposals made by Sir John Forrest for the transfer of State debts did not, however, meet with the approval of the conferences. After the retirement of Sir John Forrest from the Commonwealth Ministry, his scheme was abandoned by the Commonwealth Government. A fresh proposal by Sir William Lyne was substituted for it, and was considered by the Conference of Premiers held in Melbourne in 1908, who expressed their dissent from its provisions. A further Conference of Premiers was held in Hobart in March, 1909, at which a scheme was drawn up providing for the unlimited extension of the Braddon clause in an amended form, the amount returnable to the States to be not less than three-fifths of the gross revenue from Customs and Excise nor less than £6,750,000 in any one year, and a special concession to be made in the case of Western Australia. In August, 1909, a conference between Commonwealth and State authorities was held in Melbourne at which an agreement was arrived at between the Prime Minister of the Commonwealth and the Premiers of the several States. This Agreement was subsequently made the basis of a proposed law for amending the Federal Constitution, which,

during the session of 1909, was passed by the statutory majority in both Houses of the Federal Parliament. It is not necessary to reproduce the exact provisions of the Agreement, which were given *in extenso* in the third issue of the Year Book. The proposed law was submitted to a referendum at the elections of 13th April, 1910, and rejected.

14. Financial Arrangement between Commonwealth and States.—The financial relations between Commonwealth and States are now regulated by the "Surplus Revenue Act 1910," which amended the "Surplus Revenue Act 1908." The most important sections are given hereunder in full :—

3. "From and after 31st December, 1910, section 87 of the Constitution shall cease to have effect, so far as it affects the power of the Commonwealth to apply any portion of the net revenue of customs and excise towards its expenditure, and so far as it affects the payment of any balance by the Commonwealth to the several States, or the application of such balance towards the payment of interest on the debts of the several States taken over by the Commonwealth."

4. (a) "The Commonwealth shall during the period of ten years beginning on 1st July, 1910, and thereafter until the Parliament otherwise provides, pay to each State by monthly instalments, or apply to the payment of interest on debts of the State taken over by the Commonwealth, an annual sum amounting to twenty-five shillings per head of the number of the people of the State:

Provided that in the six months ending the 30th June, 1911, the Commonwealth may deduct from the amounts payable in pursuance of this section the amounts set out in the Schedule."

(b) "If in order to comply with section 87 of the Constitution the sums paid and applied under this section during the six months ending on 31st December, 1910, amount to more than twelve shillings and sixpence per head of the number of the people of the several States, the amounts paid and applied under this section during the next six months shall be correspondingly reduced, so that the amounts so paid and applied during the whole of the financial year ending on 30th June, 1911, shall not amount to more than twenty-five shillings per head of the number of the people of the several States, less the deductions provided for in the proviso to the last subsection."

5. (a) "The Commonwealth shall during the period of ten years beginning on the 1st July, 1910, and thereafter until Parliament otherwise provides, pay to the State of Western Australia, by monthly instalments, an annual sum which in the first year shall be two hundred and fifty thousand pounds, and in each subsequent year shall be progressively diminished by the sum of ten thousand pounds.

(b) "One-half of the amount of the payments so made shall be debited to all the States (including the State of Western Australia) in proportion to the number of their people, and any sum so debited to a State may be deducted by the Commonwealth from any amount payable to the State in pursuance of this Act."

Section 6 provides for the final payment of any surplus revenue there may be to the States "in proportion to the number of their people."

Section 7 provides that "the number of the people" in any financial year shall be deemed for the purposes of this Act to be the number estimated by the Commonwealth Statistician as existing on the 31st December falling in that financial year.

The Schedule referred to in section 4, sub-section (a) is as follows :—

THE SCHEDULE.

Amounts to be deducted from payments to the States in the financial year ending 30th June, 1911.

New South Wales	...	...	...	£178,973
Victoria	...	...	...	143,092
Queensland	...	...	...	63,788
South Australia	...	...	...	30,529
Western Australia	...	...	...	20,113
Tasmania	...	...	...	13,505
				<hr/>
				£450,000

§ 2. Consolidated Revenue Fund.

(A) Nature of Fund.

The provisions made for the formation of a Commonwealth Consolidated Revenue Fund, and the means to be adopted for operating on that fund, are contained in sections 81, 82, and 83 of the Constitution. In section 81 it is provided that "All revenues or moneys raised or received by the Executive Government of the Commonwealth shall form one Consolidated Revenue Fund, to be appropriated for the purposes of the Commonwealth in the manner and subject to the charges and liabilities imposed by this Constitution." A strictly literal interpretation of this section would appear to require all loan and trust moneys received by the Commonwealth Executive to be paid to Consolidated Revenue. It is, however, held by Quick and Garran, in their "Annotated Constitution," that the "generic word *moneys* must be controlled by the preceding specific word *revenues*, and limited to moneys in the nature of revenue." This is the view of the matter which has been adopted by the Commonwealth Treasury in the preparation of its accounts. At present the Commonwealth has no Loan Account, but certain moneys received, which are not of the nature of revenue, are paid to Trust Account. As regards expenditure from the Consolidated Revenue Fund, section 82 provides that the costs, charges, and expenses incident to the collection, management, and receipt of the Consolidated Revenue Fund should form the first charge thereon, while section 83 stipulates that "no money shall be drawn from the Treasury of the Commonwealth except under appropriation made by law." Such appropriations are either special, and as such are provided for by means of a permanent Act, or are annual, and provided for in an annual Appropriation Act.

(B) Revenue.

1. **Total Collections.**—The consolidated revenue of the Commonwealth, which in 1901-2, the first complete financial year under the new régime, amounted to £11,296,985, had, in 1911-12, reached a total of £20,548,520, an increase in ten years of £9,251,535.

Particulars concerning the total amount of revenue collected by the Commonwealth Government from 1st July, 1907, to 30th June, 1912, are contained in the following table:—

CONSOLIDATED REVENUE OF THE COMMONWEALTH, 1907-8 to 1911-12.

	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Commonwealth ...	15,019,034	14,350,793	15,540,669	18,806,237	20,548,520

The revenue collected by the Commonwealth during the financial year 1907-8 was higher than in any preceding year, the large increase being mainly due to the additional revenue collected in connection with the new tariff introduced on the 8th August, 1907. For 1908-9 the revenue was lower than that for the preceding year, but the total for the Commonwealth shews a substantial excess over any year prior to 1907-8.

2. **Collections per Head.**—In the table given hereunder particulars are furnished of the amount of revenue per head of population collected in respect of the Commonwealth for the last five years :—

COMMONWEALTH REVENUE PER HEAD OF POPULATION, 1907-8 to 1911-12.

	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Commonwealth ...	3 12 2	3 7 9	3 11 11	4 5 0	4 9 11

3. **Sources of Revenue.**—The following table furnishes particulars concerning the Commonwealth revenue derived from each source during the years 1907-8 to 1911-12 :—

SOURCES OF COMMONWEALTH REVENUE, 1907-8 to 1911-12.

Sources of Revenue.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Customs ...	9,341,108	8,626,521	9,505,855	10,507,080	12,071,434
Excise ...	2,304,244	2,217,546	2,087,310	2,473,364	2,638,702
Postal ...	3,300,096	3,409,426	3,731,741	3,906,015	3,916,254
Defence ...	13,565	5,024	21,847	57,520	74,298
Patents ...	17,421	15,367	16,644	21,295	19,081
Trade Marks, Copyrights, and Designs	8,657	6,110	4,790	5,265	5,639
Quarantine ...	...	...	4,724	7,063	9,875
Coinage ...	...	...	69,646	198,893	156,489
New revenue ...	25,837	35,978	63,076	...	...
Public Service Pension Funds, Repayments and Transfers	...	34,821	35,036	61,405	39,027
Land Tax ...	...	...	...	1,370,344	1,366,457
Northern Territory ...	...	...	...	10,521	31,225
Credit Balance Northern Territory Funds	...	...	...	151,513	...
Miscellaneous ...	8,106	...	...	35,954	220,039
Total ...	15,019,034	14,350,793	15,540,669	18,806,237	20,548,520

The only feature of this table calling for remark is the rapid annual rise of the Customs revenue since 1908-9. The Excise and Postal revenues have only shown a comparatively small upward tendency during the period under review.

4. **Customs.**—As already noted, several of the provisions of the Constitution were made dependent for their date of commencement on the imposition of uniform duties of Customs. Thus the book-keeping system and the Western Australian special tariff provisions both hinged upon the date on which the uniform duties of Customs were imposed. The Bill to provide for the collection of such duties was introduced in the Commonwealth House of Representatives on 9th October, 1901, and, in accordance with the usual practice, a resolution to protect the revenue and provide for the collection forthwith of the duties specified in the Bill, was duly carried. This date, 9th October, 1901, is consequently that on which the uniform duties of Customs are considered as having been imposed. A reference to the various enactments of the Commonwealth Legislature relative to the imposition of Customs duties will be found in Section XV., "Commerce," pages 587 to 591.

5. **Customs Revenue for Past Five Years.**—Particulars for the Commonwealth as a whole, for the five years 1907-8 to 1911-12, are furnished in the following table:—

COMMONWEALTH CUSTOMS REVENUE, 1907-8 to 1911-12.

Classes.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Stimulants	2,281,424	2,252,380	2,330,215	2,564,101	2,706,058
Narcotics	1,057,996	961,411	994,077	1,089,932	1,150,990
Sugar	51,499	140,343	506,385	170,822	275,077
Agricultural products	806,526	886,612	855,313	869,708	996,953
Apparel and textiles	2,063,674	1,630,490	1,872,832	2,068,922	2,385,786
Metals and machinery	1,030,519	932,944	997,973	1,264,986	1,554,983
Oils, paints, etc.	197,840	206,688	199,377	239,229	285,737
Earthenware, etc.	278,201	230,795	247,491	334,834	375,403
Drugs and chemicals	77,281	71,589	76,898	92,857	104,341
Wood, wicker, and cane	360,699	336,361	324,197	463,289	501,278
Jewellery, etc.	256,835	198,196	222,749	263,818	309,309
Leather, etc.	218,918	208,120	253,376	303,988	386,824
Paper and stationery	193,813	164,677	167,531	204,009	230,212
Vehicles	148,003	95,888	122,212	170,940	279,828
Musical instruments	90,905	72,128	82,949	109,423	176,009
Miscellaneous articles	191,782	205,697	220,580	258,953	313,505
Other receipts	35,193	32,202	31,700	37,269	39,141
Total Customs	9,341,108	8,626,521	9,505,855	10,507,080	12,071,434

It will be seen that throughout the period here dealt with the Customs revenue from stimulants and narcotics has represented, approximately, 35 per cent. of the total Customs revenue. The other principal articles from which Customs revenue was derived were "apparel and textiles," "metals and machinery," and "agricultural products." The most marked increase in the amount of duty collected is in the class of "metals and machinery," the revenue under this head for 1911-12 exceeding that for 1907-8 by £524,464.

In all cases except those of "Sugar," "Agricultural products," "Oils, paints, etc.," and "Miscellaneous articles," the revenue for 1908-9 fell short of that for 1907-8, owing mainly to the somewhat abnormal collections of 1907-8, consequent on the tariff of that year.

6. **Excise Collections, 1907-8 to 1911-12.**—Particulars concerning the amount of Excise collected under each head during each of the years ending 30th June, 1908 to 1912, are given hereunder:—

COMMONWEALTH EXCISE REVENUE, 1907-8 to 1911-12.

Particulars.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Beer	555,720	551,859	584,503	617,178	694,001
Spirits	351,763	243,736	267,877	331,024	376,440
Starch	25,917	23,558	3,897	507	...
Sugar	741,928	750,776	548,716	794,645	748,670
Tobacco	618,599	688,017	673,437	720,305	810,242
Licenses	10,250	9,667	8,880	9,705	9,349
Agricultural machinery	67	Dr. 67	...	...	...
Total Excise ...	2,304,244	2,217,546	2,087,310	2,473,364	2,638,702

Comparing the Excise collections for 1911-12 with those for 1907-8 it will be seen that the increase in the revenue from tobacco was about 30 per cent., that from beer about 25 per cent., and that from spirits about 7 per cent., while sugar was practically stationary, and decreases were experienced in starch and licenses.

7. Commonwealth Taxation.—Under section 51, sub-section (ii.) of the Constitution, power is given to the Commonwealth Parliament to make laws with respect to taxation, but so as not to discriminate between States or parts of States. Section 90 of the Constitution makes the power of the Commonwealth Parliament to impose Customs and Excise duties an exclusive one, but it would appear that as regards all other forms of taxation the States and Commonwealth possess concurrent powers. The question of the imposition by the Commonwealth Parliament of direct taxes such as land and income taxes is one which has been the subject of considerable discussion, and the opinion has been expressed that the intention of the framers of the Constitution was that of restricting the powers of taxation of the Commonwealth to the imposition of Customs and Excise duties except in cases of great national peril. Whatever the intention of the framers may have been in this matter, the Constitution itself contains no such provision, and the Commonwealth Parliament is given an absolutely free hand in the imposition of taxation. Up to the end of the financial year 1909-10 the only taxes so levied were those of Customs and Excise, referred to in detail in the foregoing paragraphs. During the 1910 session of the Federal Parliament, however, an Act—assented to on 17th November, 1910—was passed, giving to the Commonwealth the power of levying a tax upon the unimproved value of all lands within the Commonwealth which were owned by taxpayers, and not specially exempted. Detailed reference to this Act is appended.

8. Commonwealth Land Tax.—(i.) *Legislation.* As previously indicated, the land taxation, so far as the Commonwealth is concerned, is regulated by "The Land Tax Assessment Act 1910," No. 22 of 1910, which received assent on 17th November, 1910. Under this Act the taxable value of all the land owned by any person is deemed to be (a) in the case of an absentee—the total sum of the unimproved value of each parcel of the land; (b) in the case of an owner not an absentee—the balance of the total sum of the unimproved value of each parcel of the land, after deducting the sum of £5000. Every part of a holding which is separately held by any occupier, tenant, lessee, or owner, is deemed to be a separate parcel. All land owned by a company is considered to be owned by the shareholders of the company as joint owners, in the proportion of their interests in the paid-up capital. It may be noted that a company is never treated as an absentee, but individual shareholders who are absentees are separately assessed and liable as such. Land owned by a Mutual Life Assurance Society (except such as it holds as mortgagee in possession, or which it has acquired by virtue of a mortgage) is deemed to be owned by the Society as trustee for the Australian policyholders in proportion to the surrender value of their policies. The amount of the tax collected during the financial year ending 30th June, 1911, was £1,370,344, and at the end of the financial year ending 30th June, 1912, was £1,366,457.

(ii.) *Exemptions.* The following are the principal exemptions:—

- (a) All land owned by a State or Municipal or other public authority.
- (b) All land owned by any Society registered under a State Act as a friendly society, or trades-union, or building society; excepting, in the case of the latter, such land as it might acquire through the foreclosure of a mortgage.
- (c) All land held in trust for a charitable or educational institution not carried on for the purposes of gain.
- (d) All land used as a site for—
 - (1) A place of worship or place of residence for clergy, or ministers, or order of a religious society;
 - (2) a public library, institute, or museum;
 - (3) a show ground;
 - (4) a public cemetery;
 - (5) a public garden, recreation ground, or reserve;
 - (6) a public road;
 - (7) a fire-brigade station.

(iii.) *Rates.* The rates of taxation are set forth in the Land Tax Act 1910 (No. 21 of 1910) according to the following schedules:—

FIRST SCHEDULE.

Rate of tax when owner is not an absentee.

For so much of the taxable value as does not exceed £75,001 the rate of tax per pound sterling shall be one penny where the taxable value is one pound sterling, and shall increase uniformly with each increase of one pound sterling in the taxable value, in such manner that—

the increment of tax between a taxable value of £15,000 and a taxable value of £15,001 shall be 2d.; the increment of tax between a taxable value of £30,000 and a taxable value of £30,001 shall be 3d.; the increment of tax between a taxable value of £45,000 and a taxable value of £45,001 shall be 4d.; the increment of tax between a taxable value of £60,000 and a taxable value of £60,001 shall be 5d.; and the increment of tax between a taxable value of £75,000 and a taxable value of £75,001 shall be 6d.

For every pound sterling of taxable value in excess of £75,000 the rate of tax shall be 6d.

SECOND SCHEDULE.

Rate of tax when owner is an absentee.

For so much of the taxable value as does not exceed £5000 the rate of tax per pound sterling shall be one penny.

For so much of the taxable value as exceeds £5000 but does not exceed £80,001 the rate of tax per pound sterling shall be 2d. where the excess is one pound sterling, and shall increase uniformly with each increase of one pound sterling in the taxable value in such manner that—

the increment of tax between a taxable value of £20,000 and a taxable value of £20,001 shall be 3d.; the increment of tax between a taxable value of £35,000 and a taxable value of £35,001 shall be 4d.; the increment of tax between a taxable value of £50,000 and a taxable value of £50,001 shall be 5d.; the increment of tax between a taxable value of £65,000 and a taxable value of £65,001 shall be 6d.; and the increment of tax between a taxable value of £80,000 and a taxable value of £80,001 shall be 7d.

For every pound sterling of taxable value in excess of £80,000 the rate of tax shall be 7d.

Formation of the Land Tax Office. Immediately after the passage of the legislation referred to in the preceding paragraphs, a Commissioner was appointed to administer the Act, and a Land Tax Office was created with branches in every State. At the very inception of the office its existence was threatened by litigation—the outcome of a feeling in certain quarters that the Federal Government, in entering the field of direct taxation, had exceeded the powers entrusted to it by the Constitution. With the object

of testing the legal position, a case was brought before the High Court [*Osborne v. The Commonwealth*] which resulted in favour of the Government.

The First Assessments. The first assessments were completed and the first tax paid in the financial year ending 30th June, 1911. The following table, compiled from returns furnished by the Commissioner of Land Tax, shews the amounts of tax assessed and paid as at 30th June, 1911, for each State. A distinction has been drawn between resident and absentee assessments; and—as far as the payment of tax is concerned—a still further subdivision has been effected into town and country properties.

**PARTICULARS OF LAND TAX ASSESSMENT FOR EACH STATE FOR YEAR
ENDING 30th JUNE, 1911.**

	No. of Returns Assessed.	Unim- proved Value as ascertained by Department.	Taxable Balance after deductions.	Tax Assessed.			Yield per £ of taxable value.
				Town.	Country.	Total.	
New South Wales—		£	£	£	£	£	d.
Resident	4,514	79,188,969	53,762,042	194,037	495,004	689,041	
Absentee	548	2,073,068	2,063,032	12,419	11,780	24,199	
	5,062	81,262,037	55,825,074	206,456	506,784	713,240	3.07
Victoria—							
Resident	4,218	49,111,863	28,723,902	133,014	209,119	342,133	
Absentee	772	1,427,246	1,423,047	6,794	12,500	19,294	
	4,990	50,539,109	30,146,949	139,808	221,619	361,427	2.88
Queensland—							
Resident	1,709	15,513,613	10,298,928	39,131	75,848	114,979	
Absentee	288	452,518	451,792	2,298	1,677	3,975	
	1,997	15,966,131	10,750,720	41,429	77,525	118,954	2.66
South Australia—							
Resident	1,665	17,768,929	10,686,550	36,785	87,206	123,991	
Absentee	334	659,196	656,946	2,259	8,847	11,106	
	1,999	18,428,125	11,343,496	39,044	96,053	135,097	2.86
Western Australia—							
Resident	540	6,110,661	3,971,244	22,874	18,310	41,184	
Absentee	201	312,883	312,574	1,509	896	2,405	
	741	6,423,544	4,283,818	24,383	19,206	43,589	2.44
Tasmania—							
Resident	342	5,592,343	3,057,039	6,732	24,160	30,882	
Absentee	140	235,409	234,676	290	1,490	1,780	
	482	5,827,752	3,291,715	7,012	25,650	32,662	2.38
GRAND TOTAL—							
Resident	12,988	173,286,378	110,499,705	432,563	909,647	1,342,210	
Absentee	2,283	5,160,320	5,142,067	25,569	37,190	62,759	
	15,271	178,446,698	115,641,772	458,132	946,837	1,404,969	2.92

Although in the first column the total number of returns assessed appears as 15,271, the actual number of taxpayers was only 14,210. The difference is due to the fact that,

where the landowner is possessed of an estate in more than one State of the Commonwealth, one return is counted in each State affected for the interest concerned. The total number of taxpayers does not include those who are known as secondary taxpayers, viz., those who pay as company shareholders, or through trusts in cases where they own no land in severalty. The columns which relate to the amount of tax assessed and paid as at 30th June, 1911, will be subject to considerable modification, owing to the effect of the High Court's decisions in connection with the assessment of trust estates and secondary taxpayers. The work of re-assessment is not yet complete.

On reference to the first column, it will be seen that the number of absentee assessments is 2283, or about 15 per cent. of the total for the Commonwealth. When reference is made, however, to the total amount of tax paid it is found that only about $4\frac{1}{2}$ per cent. is contributed by absentee owners, and this in spite of the fact that their estates are not favoured by any statutory deduction. This points to the fact that, on the whole, the absentee owners possess estates of comparatively low taxable value.

On comparing town and country properties it is seen that the former contributes about one-third of the total amount of tax, and the latter about two-thirds. In fact, the country assessments largely exceed the town assessments in every State, except Western Australia. With regard to the respective shares of the different States, New South Wales contributes about half the tax, or about 9s. per head of population; Victoria, with its much closer settlement, comes next with about one quarter of the tax, or 5s. 6d. per head; South Australia, Queensland, Western Australia, and Tasmania contribute to the balance in the order named.

The last column shows the amount paid in each State, per £ of taxable value. The influence of the large aggregations of property in New South Wales is at once apparent, for that State with 3.07d. per £ not only heads the list, but is actually the only State which exceeds the Commonwealth average.

The following table shows the area of land in each State and the areas held under the different kinds of tenure. To each column a subsidiary column is attached shewing the percentage which the total for the State bears to the total for the Commonwealth:—

COMPARISON OF TENURES, TAXABLE AREAS, AND TAX AT 30th JUNE, 1911.

State.	Area.		Area of Alienated Land.		Area in process of Alienation (part only taxable).		Area held under Lease or License (part only taxable).		Area included in Taxable Returns.		Tax Assessed.	
	Acres.	% on T't'l	Acres.	% on T't'l	Acres.	% on T't'l	Acres.	% on T't'l	Acres.	% on T't'l	£	% on T't'l
N.S.Wales...	198,638,080	10.4	36,153,068	37.3	15,614,036	36.0	126,803,182	15.5	42,397,020	58.4	713,240	50.8
Victoria ...	56,245,760	3.1	23,442,000	24.2	5,094,000	11.7	15,378,000	1.8	8,962,838	12.5	361,427	25.8
Queensland	429,120,000	22.6	15,460,352	16.1	7,971,342	18.2	294,673,189	36.2	7,012,417	9.6	118,954	8.4
S. Australia	243,244,800	12.7	9,017,493	9.3	1,846,875	4.3	111,922,330	13.8	6,741,296	9.3	135,097	9.6
North Terr.	335,116,800	17.6	473,809	0.5	...	...	96,077,714	11.7	...	...	...	...
W. Australia	624,588,800	32.8	7,202,696	7.4	11,843,236	27.3	169,937,644	20.8	4,713,039	6.5	43,589	3.1
Tasmania ...	16,777,600	0.8	4,932,276	5.2	1,104,379	2.5	1,463,044	0.2	2,701,659	3.7	32,662	2.3
C'wealth ...	1,903,731,840	100.0	96,681,694	100.0	43,473,868	100.0	816,155,103	100.0	72,528,271	100.0	1,404,969	100.0

The areas given in this table are from the latest Lands Departments' Reports available. The column "Area of Alienated Land" refers to land held under deed only. Land in process of alienation does not include conditional leases in New South Wales, which are taxable as leases. It includes, however, the tenure known as Conditional Purchase Lease in Victoria, which is the equivalent of a conditional purchase in New South Wales. Conditional Purchases are only taxable when all conditions except payment of balances have been fulfilled. With regard to areas held under lease or license, the total areas of this class in the several States are indicated.

It was only to be expected that there would be some movement of land consequent upon the operations of the Land Tax Act. The following table shews the number and unimproved value of estates bought and sold by taxpayers, for the period of nine months preceding 30th June, 1911 :—

**PURCHASES AND SALES BY TAXPAYERS OF TAXABLE LANDS FROM
1st OCTOBER, 1910, to 30th JUNE, 1911.**

State.	Sales.		Purchases.	
	Number.	Unimproved Value.	Number.	Unimproved Value.
		£		£
Victoria and Central*	7,032	7,684,221	1,601	3,798,275
New South Wales...	7,134	6,931,090	1,151	3,496,973
Queensland ...	1,109	1,027,206	166	511,328
South Australia ...	2,059	1,798,545	744	1,135,069
Western Australia...	656	391,555	107	121,022
Tasmania ...	298	355,676	105	203,839
Total ...	18,288	18,188,293	3,874	9,266,506

* Central returns relate to returns that include properties in more than one State.

It will be seen that there are many more sellers than buyers of the tax-paying class, but the average value of the purchases largely exceeds that of the sales.

The information just given only shows the position of affairs as at 30th June, 1911. The second report of the Commissioner of Land Tax had not been issued at the time of writing.

9. Details of Postal Revenue, 1907-8 to 1911-12.—Particulars concerning the postal revenue of the Commonwealth for each of the financial years from 1907-8 to 1911-12 are contained in the following table :—

COMMONWEALTH POSTAL REVENUE, 1907-8 to 1911-12.

Particulars.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Private boxes and bags	15,868	17,548	19,078	20,993	23,383
Commission—					
Money orders & postal notes	94,624	100,034	104,457	112,568	121,432
Telegraphs	650,426	642,548	681,038	740,428	788,441
Telephones	410,741	441,551	509,623	518,857	752,423
Postage	2,043,777	2,111,333	2,253,500	2,363,385	2,088,866
Miscellaneous	84,660	96,412	164,045	149,784	141,709
Total	3,300,096	3,409,426	3,731,741	3,906,015	3,916,254

10. Revenue from Patents.—Under the Commonwealth Patents Act 1903, which was assented to on 22nd October, 1903, and came into force on 1st June, 1904, the complete control of the Patents administration of Australia passed from the several State Governments to that of the Commonwealth, which, under section 19 (a) of the Act mentioned, was authorised to collect for each State the fees to which it was entitled under the State Act in respect of proceedings then pending.

The revenue collected since the financial year 1907-8 is shewn in the following table:—

COMMONWEALTH PATENTS REVENUE, 1907-8 to 1911-12.

	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Revenue	17,421	15,367	16,644	21,295	19,081

11. Revenue from Trade Marks, etc.—Under the several Acts of the Commonwealth Legislature relating to trade marks, copyrights, and designs, the Commonwealth Government has assumed the exclusive administration of such matters, and now collects all revenue accruing therefrom. The following table gives particulars of the amounts since this item first appeared in the Commonwealth accounts:—

**COMMONWEALTH TRADE MARKS, COPYRIGHTS AND DESIGNS REVENUE,
1907-8 to 1911-12.**

	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Revenue	8,657	6,110	4,790	5,265	5,639

12. Defence Revenue.—The revenue appearing under the head of “Defence” comprises the receipts derived from the sale of stores and clothing, from fines, etc., and for 1911-12 amounted to £74,298.

13. Coinage.—The revenue for the Commonwealth under this head is derived from the profit on coin issued, and is made up of £139,518 from silver coin and £16,971 from bronze coin.

(C) Expenditure.

1. Nature of Commonwealth Expenditure.—The disbursements by the Commonwealth Government of the revenue collected by it fell naturally, under the “book-keeping” system, into three classes, viz.:—

- (a) Expenditure on transferred services.
- (b) Expenditure on new services.
- (c) Payment to States of surplus revenue.

Of these three, only the first two were actual expenditure, the last being merely a transfer, the actual expenditure being incurred by the States. In accordance with the provisions of the Constitution the expenditure on transferred services was, under the “book-keeping” system, debited to the several States in respect of which such expenditure was incurred, while the expenditure on new services was distributed *per capita*. Surplus Commonwealth revenue was paid to the States monthly. During the earlier years of Federation, viz., until the end of the year 1903-4, new works, etc., for transferred departments were treated as transferred expenditure, and were charged to the States on.

whose behalf the expenditure had been incurred. In subsequent years all such expenditure was regarded as expenditure on new services and was distributed amongst the States *per capita*. Under the new system of keeping the accounts there is no further debiting of expenditure to the several States.

2. **Total Expenditure.**—The total expenditure by the Commonwealth Government during the period 1907-8 to 1911-12 is shewn in the following table:—

COMMONWEALTH EXPENDITURE 1907-8 to 1911-12.

	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Commonwealth ...	6,162,129	6,420,398	7,499,516	13,158,529	14,724,097

The expenditure for 1911-12 was higher than that for any preceding year, and was considerably higher than the expenditure for 1907-8.

3. **Expenditure per Head.**—Particulars concerning the Commonwealth expenditure per head are furnished hereunder:—

COMMONWEALTH EXPENDITURE PER HEAD, 1907-8 to 1911-12.

	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Commonwealth ...	1 9 7	1 10 4	1 14 8	2 19 6	3 4 6

4. **Details of Expenditure.**—During the five years between 1906-7 and 1911-12 the total cost of the several departments increased from £4,987,317 to £14,724,097, an increase of £9,736,780, or about 195 per cent. The expenditure in the Department of Trade and Customs increased during the period by £50,351, or about 19 per cent., and in the case of Defence by £1,118,636, or 110 per cent. Advances under other heads amounted to £1,382,111, or 47 per cent., in that of the Postal Department, and no less than £6,475,267, or 847 per cent., in the case of remaining expenditure. It should be noted in this connection, however, that the increase of £1,382,111 in the postal expenditure was accompanied by an increase of £787,680 in the postal revenue, and that a very considerable portion of the increase in the remaining expenditure was due to the heavy annual appropriations for Invalid and Old Age Pensions and also for fleet construction.

5. **New Works, etc.**—As previously mentioned; the Commonwealth expenditure on new works, etc., for transferred departments was, prior to 1904-5, included under the head of “transferred” expenditure, but in that and subsequent years up to 1909-10 has been treated as “other” expenditure and debited to the States *per capita*. Particulars of the expenditure on new works, etc., during the last five years are given in the following table:—

COMMONWEALTH EXPENDITURE ON NEW WORKS, etc., 1907-8 to 1911-12.

Departments.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Trade and Customs ...	8,972	20,019	5,124	...	...
Defence ...	440,918	101,020	337,961	...	...
Postal ...	427,006	541,809	555,557	...	...
Sundry departments ...	52	4,339	2,526	2,452,960	3,566,367
Total ...	876,948	667,187	901,168	2,452,960	3,566,367

It will be seen that the Commonwealth expenditure under this head has increased considerably in recent years, the total for 1911-12 being more than four times as great as that for 1907-8. The main cause of the great increase in 1911-12 was the large expenditure on fleet construction.

6. **Cost of Departments, etc.**—Arranged in such a manner as to shew under each Department the expenditure on behalf of that Department, the cost of the several branches of the Commonwealth service for the years 1907-8 to 1911-12 was as follows:—

COST OF COMMONWEALTH DEPARTMENTS, etc., 1907-8 to 1911-12.

Departments, etc.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Governor-General	18,927	22,554	21,908	20,884	23,842
Parliament	153,414	163,991	220,233	211,558	189,550
Prime Minister ... ..	...	...	...	...	14,863
External Affairs	55,061	53,513	80,469	454,128	494,010
Attorney-General	32,216	32,027	32,349	35,329	62,899
Home Affairs	61,580	110,291	88,112	179,097	155,623
Treasury	20,413	34,473	74,108	1,960,318	2,368,506
Trade and Customs	914,973	837,741	777,788	1,051,497	1,024,389
Defence	1,334,744	1,050,590	1,534,881	1,395,798	2,128,649
Postmaster-General	3,359,290	3,625,402	3,786,755	3,559,785	4,330,896
All other Expenditure	211,511	489,816	882,913	4,290,135	3,990,865
Total	6,162,129	6,420,398	7,499,516	13,158,529	14,724,097

The largeness of the expenditure under the head of Parliament in the year 1909-10 was in great measure due to the fact that the general elections were held in that year, while the expenditure in connection with the sugar bounties is mainly responsible for the variations which have taken place in the cost of the Department of Trade and Customs. The amount paid in Old-Age and Invalid Pensions is included in Treasury expenditure for the first time in 1910-11. It may be noted that the great increase in the item "all other expenditure" for the year 1910-11 is owing to the inclusion in it for the first time of the expenditure on "new works" which had formerly been debited to the departments in which it had been incurred. More detailed reference to the items included under the above general heads is furnished in the succeeding paragraphs.

7. **Governor-General.**—In section 3 of the Constitution it is enacted that, until the Commonwealth Parliament otherwise provides, there shall be payable out of the Consolidated Revenue Fund for the salary of the Governor-General an annual sum of ten thousand pounds, and a proviso is made that the salary of the Governor-General shall not be altered during his continuance in office. The total expenditure in connection with the Governor-General and his establishment for the five years 1907-8 to 1911-12 is as follows:—

EXPENDITURE, GOVERNOR-GENERAL AND ESTABLISHMENTS, 1907-8 to 1911-12.

Details.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Salary	10,000	10,000	10,000	10,000	9,973
Repairs, etc., Government Houses	7,034	8,941	7,754	6,848	10,113
Contingencies	1,893	3,613	4,154	4,036	3,756
Total	18,927	22,554	21,908	20,884	23,842

8. **Parliament.**—Under this head have been grouped all the items of expenditure connected with the Parliamentary Government of the Commonwealth, including the

salaries of the Ministers and the allowances to senators and members of the House of Representatives. Details for the five years 1907-8 to 1911-12 are furnished in the table given hereunder:—

EXPENDITURE, COMMONWEALTH PARLIAMENT, 1907-8 to 1911-12.

Details	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Salaries of Ministers	12,000	12,000	12,000	12,000	12,000
Allowances to Senators	19,446	20,406	21,368	21,519	20,997
Allowances to Members of House of Representatives	41,231	43,418	37,112	43,205	43,257
Officers, staff, contingencies, etc.	32,273	30,127	31,458	30,938	30,985
Repairs, maintenance, etc.	672	2,178	2,636	1,939	1,814
Printing	19,139	13,400	15,660	16,507	16,829
Travelling expenses of Members and others	8,982	8,841	9,767	9,153	10,029
Insurance	342	342	342	342	342
Electoral Office	5,824	6,002	6,191	5,288	5,578
Election expenses	4,080	54	49,958	5,364	1,435
Referendum ... ..	...	...	...	47,487	4,183
Administration of Electoral Act	9,425	27,223	33,602	17,437	39,863
Miscellaneous ... ..	...	...	139	379	2,238
Total	153,414	163,991	220,233	211,558	189,550

In section 66 of the Constitution provision is made that there shall be payable out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of Ministers of State, an annual sum which, until Parliament otherwise provides, shall not exceed £12,000. This provision is still in force. Allowances to senators and members of the House of Representatives are also provided for in the Constitution, section 48 of which specifies that until Parliament otherwise provides each such allowance shall consist of £400 a year, reckoned from the day on which the member takes his seat. During the second session of the Commonwealth Parliament in 1907 the question of allowances to members was under consideration, and an Act was passed raising the annual allowance from £400 to £600, such increase to date from 1st July, 1907.

9. Prime Minister's Department.—This is a new department created during the financial year 1911-12. In addition to the Prime Minister's Office it includes the Audit Office taken from the Treasury, the Executive Council taken from the External Affairs Department, and the Public Service Commissioner's Office taken from the Home Affairs Department. As control over the latter office was only assumed on 1st July, 1912, it will be found included for this year for the purposes of expenditure in the Home Affairs Department. The expenditure on the Prime Minister's Department for the financial year ended 30th June, 1912, included the following items:—Prime Minister's Office, £4447; Audit Office, £9454; Executive Council, £109; Rent, Repairs, and Miscellaneous, £853; total, £14,863.

10. External Affairs.—Under the control of the Department of External Affairs is placed the expenditure in connection with the London Office, Papua and the Northern Territory. The expenditure in connection with the Northern Territory is exclusive of the Customs and Postal expenditure. Particulars for the five years 1907-8 to 1911-12 are as follows:—

EXPENDITURE, EXTERNAL AFFAIRS DEPARTMENT, 1907-8 to 1911-12.

Details.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
High Commissioner	...	...	...	3,000	3,000
Chief Office	9,172	11,329	13,882	13,862	15,684
Executive Council	870	970	781	737	...
London Office	2,215	3,650	4,647	17,286	14,282
Papua	25,084	22,100	28,549	30,615	30,280
Rents, repairs, &c.	469	541	820	655	1,298
Northern Territory	...	...	...	326,347	248,758
Port Augusta Railway	...	...	...	...	119,426
Miscellaneous	17,251	14,923	31,790	61,626	61,282
Total	55,061	53,513	80,469	454,128	494,010

11. **Northern Territory.**—The Department of External Affairs assumed control of the administration of the Northern Territory from 1st January, 1911, and separate accounts were issued in the Treasurer's statement for the financial year ending 30th June, 1911. The chief sources of revenue for the year ending 30th June, 1912, were the Customs and Excise, amounting to £12,562, and Railways £13,483. The Postal revenue amounted to £2895, whilst the total revenue was £46,682. The chief items of expenditure were as follows:—Postal Department, £15,615; goldfields and mining, £10,682; railways, £18,769; and police, £9708. The total expenditure was £126,294. In addition to this expenditure the Commonwealth is liable for interest on loans and redemption, which for this financial year totalled £284,755. The deficiency for the year was £364,368.

12. **Papua.**—The sums shewn in the above table as expenditure in connection with Papua represent the Commonwealth grants towards the cost of administering that territory, as well as certain additional amounts. The ordinary revenue and expenditure of Papua are kept distinct from those of the Commonwealth. Apart from the Commonwealth contribution, the principal source of revenue is the Custom House. Details for the five years 1907-8 to 1911-12 are as follows:—

PAPUAN REVENUE, 1907-8 to 1911-12.

Details.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Customs dues	18,206	20,758	24,901	32,554	37,751
Other collections	7,813	6,948	11,017	13,418	13,284
Commonwealth grant	25,000	23,000	26,000	30,000	30,000
Total	51,019	50,706	61,918	75,972	81,035

One of the largest items of Papuan expenditure is the maintenance, etc., of vessels and boats, including the steam yacht "Merrie England," the total outlay under this head for 1911-12 being no less than £6499. The expenditure on public justice for 1911-12 totalled £21,758, comprising "magistrates, etc.," £11,447; "armed native constabulary," £6977, and "gaols," £3334. The total expenditure for each of the five years 1907-8 to 1911-12 was as follows:—

PAPUAN EXPENDITURE, 1907-8 to 1911-12.

Particulars.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Total expenditure ...	48,525	51,036	64,874	70,699	85,636

13. **Attorney-General's Department.**—The rapid growth in the expenditure connected with this Department during 1907-8 was brought about in large measure by the extension of the Federal High Court, the total cost of which, including the Court of Conciliation and Arbitration, for the year 1911-12 amounted to £26,319. The expenditure on Patents, Trade Marks, Copyrights, and Designs was included for the first time in 1911-12. Details for the five years 1907-8 to 1911-12 are furnished hereunder:—

EXPENDITURE, ATTORNEY-GENERAL'S DEPARTMENT, 1907-8 to 1911-12.

Details.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Attorney-General's Office ...	4,286	3,705	3,684	3,805	4,449
Crown Solicitor's Office ...	2,993	3,242	3,458	4,472	4,829
Salaries of Justices of High Court ...	15,500	15,500	15,500	15,500	15,500
High Court expenses ...	7,022	6,791	6,888	7,459	6,772
Court of Conciliation & Arbitration ...	708	1,746	1,289	2,891	4,047
Rent, repairs, etc. ...	1,707	1,043	1,530	1,202	3,411
Patents, Trade Marks, etc. ...	...	...	...	...	23,291
Miscellaneous ...	...	...	...	...	600
Total ...	32,216	32,027	32,349	35,329	62,899

14. **Home Affairs Department.**—The creation of new departments such as the Bureau of Census and Statistics, and the Meteorological Bureau, and the extension of the field of operations of the Public Works branch, all of which are grouped for general administrative purposes under the Department of Home Affairs, have led to a considerable increase in the expenditure. The heaviness of the expenditure of this department for 1908-9 was, in a large measure, due to the cost incurred by the Commonwealth in connection with the reception of the American fleet; whilst that of 1910-11 was mainly due to the appropriation for the census. Particulars for the five years 1907-8 to 1911-12 are as follows:—

EXPENDITURE, HOME AFFAIRS DEPARTMENT, 1907-8 to 1911-12.

Details.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Chief Office ...	9,257	10,383	11,454	14,178	15,684
Public Service Commissioner ...	14,818	15,636	15,952	16,989	17,881
Public Works ...	10,570	15,686	17,738	11,505	17,192
Census and Statistics ...	9,781	12,394	15,137	106,567	68,857
Meteorological Bureau ...	9,182	16,818	16,414	17,389	22,389
Rents, repairs, etc. ...	5,819	5,039	5,882	4,845	6,111
Reception of United States Fleet ...	...	32,580	...	...	...
Miscellaneous ...	2,153	1,755	5,535	7,624	7,514
Total ...	61,580	110,291	88,112	179,097	155,628

15. **Treasurer's Department.**—The sub-departments under the control of the Commonwealth Treasurer are the Treasury, the Old Age Pensions Department, and the Land Tax Office. During the financial year 1908-9 the expenditure under this department was swelled by a donation of £10,000 to the Sicily Earthquake Relief Fund, and in 1909-10 by the increased expenditure on salaries, etc., in the Old Age Pensions Department. The statements in previous Year Books have been rearranged so as to include expenditure on Invalid and Old Age Pensions from 1907-8; consequently, from that year onward until 1910-11 the amounts given below differ from those on page 794 by the item "Invalid and Old Age Pensions." Details of the expenditure of this department for each of the five years 1907-8 to 1911-12 are furnished hereunder :—

EXPENDITURE, TREASURER'S DEPARTMENT, 1907-8 to 1911-12.

Details.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Treasury	10,259	11,113	11,862	12,273	13,708
Old-age pensions—Salaries, etc. ...	...	2,297	36,423	37,492	39,810
Audit	7,804	7,996	8,593	8,819	...
Rents, repairs, etc.	1,751	1,884	3,410	5,293	7,206
Donation to Sicily earthquake relief funds ... ..	...	10,000	...	...	...
Invalid and Old-age pensions	193,621	462,528	841,181	1,874,568	2,143,212
Land Tax ... ..	...	...	...	...	60,686
Miscellaneous	599	1,183	13,820	21,873	43,884
Total	214,034	497,001	915,289	1,960,318	2,308,506

16. **Trade and Customs.**—Under this head have been included the expenditure of all the sub-departments under the control of the Minister of Trade and Customs, as well as the amounts payable as sugar and other bounties and the expenses in connection therewith. The large divergencies in the total expenditure which these figures exhibit for recent years have been mainly due to variations in the amount payable in respect of sugar bounties. Particulars for the five years 1907-8 to 1911-12 are given in the following table :—

EXPENDITURE, TRADE AND CUSTOMS DEPARTMENT, 1907-8 to 1911-12.

Details.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Chief Office	10,902	12,223	11,954	13,260	12,698
Customs (ordinary)	255,531	256,937	255,779	286,410	301,273
Patents	12,960	14,245	19,284	20,140	...
Trade Marks and Copyrights	4,954	3,655			
Fisheries ... ..	...	3,110	5,605	5,354	6,688
Analyst ... ..	...	2,010	1,995	2,511	3,235
Audit (proportion)	6,140	7,019	7,426	7,281	7,057
Quarantine	53	808	23,355	21,246	22,973
Pensions and retiring allowances	6,586	6,787	8,058	10,308	12,049
Rents, repairs, etc.	10,661	9,932	9,994	12,068	17,969
Sugar bounties and expenses	584,622	483,707	407,777	630,762	543,503
Bounties	176	2,633	5,885	11,740	22,941
New works, etc.	8,972	20,019	5,124	...	...
Iron Bonus ... ..	...	3,648	32,579	29,427	23,048
Miscellaneous	13,416	14,656	15,552	990	50,950
Total	914,973	841,389	810,367	1,051,497	1,024,389

17. **Cost of Collection.**—Excluding from the above the expenditure incurred in connection with Patents, Trade Marks, Copyrights, Quarantine, Fisheries, Analyst, and Sugar and other Bounties, the balance may be considered as representing approximately the cost entailed by the collection of the Customs and Excise revenue of the Commonwealth. Details for the five years 1907-8 to 1911-12 are as follows:—

COST OF CUSTOMS AND EXCISE COLLECTION, 1907-8 to 1911-12.

Particulars.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Gross Customs and Excise revenue	11,645,352	10,844,067	11,593,164	12,960,444	14,710,136
Cost of collection	312,207	329,583	313,887	330,318	362,486
Net revenue	11,333,145	10,514,484	11,279,277	12,650,126	14,347,650
Percentage of cost of collection on gross revenue	2.68%	3.04%	2.71%	2.54%	2.46%

It will be seen that throughout the period the cost of collecting the Customs and Excise revenue has been about 3 per cent. of the revenue collected, varying only between 2.46 per cent. in 1911-12 and 3.04 per cent. in 1908-9.

18. **Defence.**—The Commonwealth expenditure in connection with Defence, which in 1901-2 amounted to £861,218, had by 1907-8 grown to £1,334,744, but there was a decrease in 1908-9 of nearly £300,000 on the previous year, which was more than counterbalanced by a large rise in 1909-10. A slight fall was experienced in 1910-11 owing to the loss of the item "new works." The largeness of the expenditure for 1907-8 was due mainly to the provision made in that year for new works. Particulars for the five years 1907-8 to 1911-12 are as follows:—

EXPENDITURE, DEFENCE, 1907-8 to 1911-12.

Details.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Chief Office	21,913	23,884	26,366	32,609	54,004
Military	577,627	625,600	853,420	1,040,981	1,409,398
Naval	254,069	259,251	263,143	273,076	449,701
Audit (proportion)	810	960	954	1,142	1,180
Pensions and retiring allowances	974	1,017	781	965	2,269
Rents, repairs, etc.	32,023	29,798	29,621	42,863	46,257
New works, etc.	440,918	101,020	337,961	...	...
Miscellaneous	6,410	9,060	22,635	4,162	165,840
Total	1,334,744	1,050,590	1,534,881	1,395,798	2,128,649

19. **Postal.**—From a total of £3,359,290 in 1907-8 the cost of the department under the control of the Postmaster-General advanced to £4,330,896 in 1911-12, an increase of £971,606. Details for the five years 1907-8 to 1911-12 are furnished hereunder:—

EXPENDITURE, POSTAL DEPARTMENT, 1907-8 to 1911-12.

Details.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Chief Office	9,664	10,780	12,324	14,208	18,515
Postal Dept. (ordinary) ...	2,848,196	2,986,992	3,123,357	3,441,720	3,796,157
Audit (proportion)	1,981	2,393	2,398	2,704	2,894
Pensions and retiring allowances ...	19,419	26,186	32,083	31,209	36,812
Rents, repairs, etc.	49,257	51,454	54,484	62,454	72,222
New works, etc.	427,006	541,809	555,557	...	...
Miscellaneous	3,767	5,788	6,552	7,490	404,296
Total	3,359,290	3,625,402	3,786,755	3,559,785	4,380,896

20. **Miscellaneous.**—In addition to the foregoing there are certain items which do not come under any of the heads enumerated. For 1911-12 the total expenditure under this heading was £3,990,865, made up of £3,566,367 for new works, and two payments of £146,256 and £278,242 into the trust fund for the purposes respectively of old-age pensions and the construction of the fleet. The entire expenditure for new works now appears as a separate item instead of being debited to the different departments.

(D) **Subsidy Paid to States.**

1. **Net Revenue.**—As mentioned in sub-section 1 of this section, the Constitution provided under sections 87, 93 and 95 for the payment to the States of all surplus revenue of the Commonwealth, such payment to amount in the aggregate during the continuation of the Braddon clause to not less than three-fourths of the net revenue from Customs and Excise. The expression "net revenue" used in section 87 has been taken to mean the gross revenue less drawbacks and refunds, and less also cost of collection. This view, adopted by the Commonwealth Government, was that indicated by Quick and Garran in their "Annotated Constitution of the Australian Commonwealth," in which they say: "The net revenue from duties of Customs and Excise is the total receipts from these sources after deducting the cost of collection. No attempt was made in the Constitution to define the deductions which may be made in order to arrive at the net revenue; this is a matter of book-keeping, which is left wholly to the Executive Government." In actual practice the statutory three-fourths of net Customs and Excise revenue was ascertained by the Commonwealth Treasury by deducting from the total Customs and Excise revenue (less drawbacks and refunds) the "transferred" expenditure of the Department of Trade and Customs and the expenditure on new works for that department, and taking three-fourths of the result.

2. **Payments to the Several States.**—In the following table are furnished particulars relative to the amounts actually paid to the several States on account of each of the financial years 1907-8 to 1911-12:—

COMMONWEALTH SUBSIDY PAID TO STATES, 1907-8 to 1911-12.

State.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
New South Wales	3,617,472	3,326,276	3,480,314	1,954,986	2,046,993
Victoria	2,377,708	1,987,485	2,109,379	1,617,572	1,667,657
Queensland	1,038,267	1,027,047	1,099,383	691,625	761,302
South Australia	791,664	716,957	842,508	514,622	511,719
Western Australia	751,735	627,933	707,672	591,243	599,991
Tasmania	280,059	244,747	253,180	233,143	236,761
Total	8,856,905	7,980,395	8,492,436	5,603,191	5,824,423

Taking the States as a whole the surplus Commonwealth revenue paid on account of the year 1907-8 was higher than that paid on account of any other financial year. As regards the individual States the maximum payment took place in New South Wales and Victoria in 1907-8, in Queensland and South Australia in 1909-10, in Western Australia in 1902-3, and in Tasmania in 1901-2. The largeness of the amount returned by the Commonwealth to the States in respect of 1907-8 was in great measure due to the increased Customs and Excise revenue collected under the new tariff of that year. For 1908-9 the surplus revenue paid to the States was lower in all cases than that for 1907-8. This was due in part to the fact that the 1907-8 payments were somewhat abnormal, and in part to the retention by the Commonwealth in 1908-9 of all revenue in excess of the statutory three-fourths of net Customs and Excise Revenue. In 1909-10 the surplus revenue returned to the States was higher in every case than in 1908-9. In 1910-11, owing to the new system of allotting the Commonwealth subsidy, the amounts received by each State were the smallest for the period under review, but they all rose, with the exception of South Australia, in 1911-12.

3. Commonwealth Subsidy per head of Population.—The following table furnishes particulars concerning the amount of surplus Commonwealth revenue per head of population which the several States received during the financial years 1905-6 to 1909-10, and is of interest in connection with the new financial agreement, under which the Commonwealth is to pay 25s. per head of population, to all the States, for a period of ten years, subject to a special arrangement in favour of Western Australia. (See page 783.)

**COMMONWEALTH SUBSIDY PER HEAD OF POPULATION PAID TO STATES,
1905-6 to 1909-10.**

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
New South Wales	1 16 10	1 19 9	2 6 4	2 2 0	2 3 1
Victoria	1 14 7	1 16 1	1 18 7	1 11 9	1 13 0
Queensland	1 12 3	1 14 10	1 18 1	1 16 10	1 18 1
South Australia	1 10 8	1 14 10	2 1 11	1 16 10	2 2 6
Western Australia	3 9 9	3 0 9	2 19 1	2 8 4	2 13 3
Tasmania	1 7 5	1 8 2	1 9 6	1 5 6	1 6 3
Total	1 16 8	1 18 4	2 2 7	1 17 6	1 19 3

4. Proportion Actually Paid.—For the period of nine and a-half years from the 1st January, 1901, to 30th June, 1910, the percentage of net revenue from Customs and Excise duties paid to the several States was as follows:—New South Wales, 84 per cent.; Victoria, 80 per cent.; Queensland, 74 per cent.; South Australia, 84 per cent.; Western Australia, 86 per cent.; Tasmania, 78 per cent.

§ 3. Trust Fund.

1. Trust Accounts.—The Trust Fund credit balance on 30th June, 1912, amounted to £14,255,098, as compared with £11,530,306 for the corresponding date in the year ending 30th June, 1911. This enormous increase was due mainly to the Australian Notes Account referred to in detail in paragraph 3. Details concerning the various trust accounts contributing to this amount are as follows:—

COMMONWEALTH TRUST FUND, 30th JUNE, 1912.

Trust Accounts.	Balance at 30th June, 1912.	Trust Accounts.	Balance at 30th June, 1912.
	£		£
Small Arms Ammunition ...	89,766	Officers' Assurance... ..	1,274
Defence Clothing Material ...	24,391	Defalcations	112
Small Arms... ..	6,087	Guarantee Fund	4,057
Unclaimed Militia Pay—military	1,991	Naval Agreement Act	217
" naval	351	Repatriation of Pacific Islanders	35
Military Expenses	14,326	London Liabilities	1,512,575
Customs Officers' Overtime ...	916	Minerals Account	1,965
Money Order	41,150	Quarantine	220
International Postal & Money		Naval Defence	1,196,829
Order	12,008	Australian Notes Account ...	9,626,645
Invalid and Old Age Pensions...	1,153,543	Other Trust Moneys	566,160
Papua	480		
		Total	14,255,098

2. **Distribution.**—The amounts to credit of Trust Fund in the several States on 30th June, 1912, were as follows:—New South Wales, £630,963; Victoria, £12,892,480; Queensland, £233,181; South Australia, £196,545; Western Australia, £218,312; and Tasmania, £83,617.

3. **Australian Notes Account.**—After the passage of the Australian Notes Act, Australian notes began to appear in circulation in December, 1910. For the first half of the calendar year 1911, they circulated side by side with bank notes and Queensland Treasury notes. On 30th June, 1912, the notes issued and unredeemed amounted to £9,485,943. Against this there was a reserve in gold coin of £4,279,007 and other assets, of which the most important were investments in Government Stock and fixed deposits, totalling £5,235,000, and returning an annual income of £185,300. After 30th June, 1911, the penal clauses of the Notes Act came into operation and the banks and the Queensland Government began to withdraw their notes from active circulation. By the end of the year the process was virtually complete and the situation became normal.

The position, according to a Treasury return issued at the end of the March quarter of 1913, was as follows:—

COMMONWEALTH NOTES ISSUED AND UNREDEEMED AT 26th MARCH, 1913.

	£
£1	2,940,863
£5	3,240,530
£10	1,726,860
£20	377,740
£50	767,900
£100	410,700
	<hr/> 9,464,593

The amount of the gold reserve was £3,917,657, representing 41.39 per cent. of the liability. Out of this amount of Commonwealth notes the banks hold about £5,000,000, the balance being in active circulation.

The subject is also dealt with at some length in Section XXI., Sub-section 2 Banking.

4. **Advances by Commonwealth Government to States.**—Reference has been made in the previous paragraph to the investments of the gold reserve in the Australian Notes Account. A large proportion has been advanced to the respective State Governments for short periods, sometimes as low as one year. This is a novel and interesting departure in Australian Public Finance, and in view of the new financial relations thus brought about between the Commonwealth and State Governments, the following table has been compiled, giving full particulars of the borrowings of the latter from the former as at the end of the calendar year 1912.

**AMOUNT ADVANCED BY COMMONWEALTH GOVERNMENT TO STATE
GOVERNMENTS AT 27th DECEMBER, 1912.**

	Interest.	When Maturing.	Amount.
	Per cent.		£
NEW SOUTH WALES—			
Funded Stock	3½	10/8/1919	1,000,000
Fixed Deposits	3	13/6/1913	800,000
" "	3	21/6/1913	200,000
" "	3½	17/7 to 17/10/1913	400,000
" "	4	25/12/1913	750,000
VICTORIA—			
Debentures (Face Value £1,000,000) ...	3½	1/5/1921	980,000
Fixed Deposits	2½	1/2/1913	190,000
QUEENSLAND—			
Fixed Deposit... ..	3½	5/3/1913	1,000,000
SOUTH AUSTRALIA—			
Fixed Deposit... ..	3½	1/3/1913	78,055
WESTERN AUSTRALIA—			
Government Stock	3½	1/1/1926	650,000
Treasury Bills	3½	1/3/1913	200,000
" "	3½	30/11/1913	100,000
" "	3½	31/12/1913	100,000
TASMANIA—			
Inscribed Stock	3½	1/4/1921	200,000
" "	3½	1/10/1921	300,000
			6,948,055

§ 4. Commonwealth Public Debt.

Although the Federal Government has never gone to the public as a borrower there still exists a Commonwealth debt. The first portions were contracted at the beginning of 1911, when the Federal Government assumed responsibility for the outstanding liabilities of the Northern Territory and the Port Augusta-Oodnadatta Railway. Another item was added to the list later on in the year by the passage of two Acts (Nos. 20 and 24 of 1911), relating to the issue of Inscribed Stock, the former being permissive, and the latter specifying the fixed sum of £2,460,476. This amount was to be raised for the following purposes:—

- (1) Construction of Kalgoorlie-Port Augusta Railway.
- (2) Acquisition of land in Federal Territory.
- (3) Purchase of site for High Commissioner's Office in London.
- (4) Redemption of certain Treasury Bills issued by the South Australian Government on behalf of the Northern Territory.
- (5) Repayment to South Australia of amount paid out of revenue towards construction of Oodnadatta Railway.

On 18th April, 1912, an order was passed in pursuance of these Acts, creating Inscribed Stock to the value of £700,000. The money was taken from the Trust Fund, and the stock sold to the Commonwealth Treasurer at par. Interest is at the rate of $3\frac{1}{2}$ per cent. per annum, with a provision for a sinking fund of $\frac{1}{2}$ per cent. The money was spent as follows:—£400,000 in London; £226,000 in reduction of Northern Territory Debt; £34,476 to the Government of South Australia on account of the Oodnadatta Railway. There was a balance of £39,524 unexpended on 30th June, 1912. The loan is repayable at par, at any time between 1st April, 1962, and 1st April, 1972, at the option of the Commonwealth Treasurer.

The following is a statement of the Public Debt of the Commonwealth at 30th June, 1912:—

COMMONWEALTH PUBLIC DEBT, 30th JUNE, 1912.

Inscribed Stock	...	...	...	...	...	£700,000
Balance of Loans, Northern Territory				...	...	3,431,836
Balance of Loans, Port Augusta-Oodnadatta Railway						2,240,011
Total						£6,371,847

SECTION XX.

STATE FINANCE.

§ 1. General.

1. Functions of State Governments.—In any comparison of the finances of the several States due recognition must be made of the actual functions assumed by the respective Governments, and also of the local conditions and requirements in each case. Direct comparisons of public expenditure are thus rendered difficult, owing to the fact that functions which in one State are assumed by the Central Government are in another State relegated to local governing bodies, and further by the fact that costly developmental work may, under certain conditions, be not only economically justifiable, but may be an essential of progress, whilst parsimonious expenditure may be a serious economic blunder. A large expenditure may, therefore, be an indication either of gross extravagance and bad economy on the one hand or healthy and vigorous progress and good economy on the other.

Similarly, as regards revenue, imposts which in some States are levied by the Central Government are in others considered as matters to be dealt with locally. Under these circumstances care is needed in instituting comparisons between the several States, and the particulars contained in this section should be read in connection with those contained in the section dealing with Local Government. It should also be noted that in many ways the budgets of the Australian Governments differ materially from those of most European countries, owing to the inclusion therein of the revenue and expenditure of departments concerned in rendering public services, such for instance as railways, tramways, water supply, etc., which, in the other countries referred to, are often left to private enterprise.

2. Accounts of State Governments.—The various financial transactions of the States are in each case concerned with one or other of three Funds—the “Consolidated Revenue Fund,” the “Trust Funds,” and the “Loan Funds.” All revenue collected by the State is placed to the credit of its Consolidated Revenue Fund, from which payments are made under the authority of an Annual Appropriation Act passed by the Legislature, or by a permanent appropriation under a special Act. The hypothecation of the revenue from a specific tax to the payment for some special service is not practised in Australia, all statutory appropriations ranking on an equality as charges on the Consolidated Revenue Fund. The Trust Funds comprise all moneys held in trust by the Government, and include such items as savings bank funds, sinking funds, insurance companies’ deposits, etc. The Loan Funds are credited with all loan moneys raised by the State, and debited with the expenditure therefrom for public works or other purposes.

3. Inter-relation of Commonwealth and State Finance.—The principal alteration in State finance, brought about by Federation, has been that the States have transferred to the Commonwealth the large revenue received by the Customs and Postal Departments, and have been relieved of the expenditure connected with these and the Defence Departments, while, on the other hand, a new item of State revenue has been introduced, viz., the payment to the States of a Commonwealth subsidy. Provision for the taking over by the Commonwealth of certain of the public debts of the States is made

in section 105 of the Constitution, and a proposed law extending this provision to the whole of the State indebtedness, which passed both Houses of the Federal Legislature by the statutory majority, was submitted to a referendum at the election in April, 1910, and received the requisite endorsement by the electorate.

§ 2. State Consolidated Revenue Funds.

(A) Receipts.

1. Sources of Revenue.—The principal sources of State revenue are:—

- (a) Taxation.
- (b) The public works and services controlled by the State Governments.
- (c) Sale of and rental from Crown lands.
- (d) The Commonwealth subsidy.
- (e) Miscellaneous sources, comprising fines, fees, interest, etc.

Of these sources, that yielding the largest revenue for the States as a whole is the group of public works and services, the principal contributor being the Government railways and tramways. Next in magnitude comes the payment of the subsidy by the Commonwealth, followed in order by Taxation and Land Revenue.

2. Amount Collected.—The following table furnishes particulars of the total amount of consolidated revenue received by the several States during the ten years 1902-3 to 1911-12:—

STATE REVENUES, 1902-3 to 1911-12.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
	£	£	£	£	£	£	£
1902-3 ...	11,296,069	6,954,619	3,526,465	2,530,568	3,630,238	734,663	28,672,622
1903-4 ...	11,248,328	7,319,949	3,595,440	2,568,100	3,550,016	857,668	29,139,501
1904-5 ...	11,336,918	7,515,742	3,595,399	2,798,849	3,615,340	852,681	29,714,929
1905-6 ...	12,283,082	7,811,475	3,853,523	2,866,308	3,558,939	900,657	31,273,984
1906-7 ...	13,392,435	8,345,534	4,307,912	3,252,705	3,401,354	970,843	33,670,783
1907-8 ...	13,960,763	8,314,480	4,488,298	3,722,090	3,376,641	1,005,274	34,867,646
1908-9 ...	13,646,126	8,247,684	4,769,172	3,591,260	3,268,993	934,405	34,457,640
1909-10	14,540,073	8,597,992	5,119,254	4,032,891	3,657,670	1,008,932	36,956,812
1910-11	13,839,139	9,204,503	5,320,008	4,181,472	3,850,439	970,092	37,365,653
1911-12	15,776,816	10,009,796	5,989,347	4,450,739	3,966,673	1,084,663	41,278,034

The figures given in this table relate in each instance to the financial year ended 30th June, except in the case of Tasmania, where the figures shewn for 1902-3 and 1903-4 relate respectively to the years ended 31st December, 1902 and 1903.

During the nine years from 30th June, 1902-3, to 30th June, 1911-12, the aggregate revenues of the States increased by no less a sum than £12,605,412, or a little less than 44 per cent. Increases were in evidence in all the States, the largest increase being that of £4,480,747 in New South Wales.

It will be noticed that in all the States, except Queensland, the revenue for 1908-9 was lower than that of the preceding year, largely owing to the fact that the revenue for 1907-8 was swelled by the payment of Customs duties in anticipation of, or in consequence of, the new tariff imposed on 8th August, 1907.

3. Revenue per Head.—Details concerning the revenue per head of population, collected in the several States of the Commonwealth during the ten years 1902-3 to 1911-12, are furnished in the table given hereunder. It will be seen that throughout the period Western Australia has collected by far the largest amount per head, and that Tasmania has collected the least.

STATE REVENUE PER HEAD OF POPULATION, 1902-3 to 1911-12.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1902-3 ...	8 17 2	5 15 1	6 17 8	7 0 0	17 2 6	4 1 11	7 8 0
1903-4 ...	7 17 11	6 1 6	6 18 11	7 2 2	15 15 11	4 13 9	7 8 10
1904-5 ...	7 15 9	6 4 8	6 17 0	7 14 0	15 2 0	4 15 1	7 9 6
1905-6 ...	8 5 1	6 9 1	7 5 0	7 16 4	14 4 7	4 16 8	7 15 1
1906-7 ...	8 16 0	6 16 10	7 19 10	8 15 7	13 16 7	5 4 8	8 4 7
1907-8 ...	8 18 10	6 14 11	8 4 6	9 17 3	13 5 9	5 6 0	8 7 7
1908-9 ...	8 12 4	6 11 11	8 11 3	9 4 5	12 11 9	4 17 6	8 2 10
1909-10 ...	9 0 2	6 14 8	8 17 2	10 3 6	13 15 4	5 4 6	8 10 11
1910-11 ...	8 8 5	7 1 5	8 17 8	10 3 11	13 18 2	5 0 1	8 8 11
1911-12 ...	9 8 5	7 6 11	9 12 6	10 12 10	13 9 8	5 12 1	9 0 8

In all the States, except Western Australia, the four years up to 1909-10 witnessed a marked increase in the State revenue collections per head, the most noticeable advances being £2 7s. 2d. in the case of South Australia and £1 12s. 2d. in that of Queensland. The Western Australian decline was continuous until 1908-9, though recovering in 1909-10, and for 1911-12 the revenue per head in that State exceeded the Commonwealth average by nearly 50 per cent. Four States, viz., Western Australia, South Australia, Queensland, and New South Wales, exceeded the Commonwealth average for 1911-12, while the other two States fell short of it.

4. Details for 1911-12.—Classifying the revenue of the several States in the manner indicated in § 2 (A) 1 above, particulars for the year 1911-12 are as follows:—

DETAILS OF STATE REVENUE, 1911-12.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	All States.
	£	£	£	£	£	£	£
Taxation ...	1,885,653	1,501,696	787,577	551,994	352,314	340,434	5,419,668
Public Works & Services ...	9,515,603	5,707,960	3,158,925	2,600,930	2,346,952	359,899	23,690,269
Land ...	1,765,459	360,065	875,221	478,780	380,103	94,584	3,954,192
Commonwealth subsidy ...	2,046,993	1,667,637	757,087	511,719	638,527	236,761	5,858,744
Miscellaneous ...	563,108	772,418	410,537	307,316	248,777	53,005	2,355,161
Total ...	15,776,816	10,009,796	5,989,347	4,450,739	3,966,673	1,084,663	41,278,034

It will be noted that the amounts returned under the heading "Commonwealth subsidy" do not quite agree with those given in the chapter on Commonwealth Finance, page 800. This arises from the fact that the State figures shew the amount for which credit was taken by the State during the financial year 1911-12, whilst the Commonwealth figures shew the amounts paid to State Treasurers on account of that financial year.

5. Revenue per Head, 1911-12.—Particulars concerning the revenue per head of population in each State derived from the several sources enumerated in the preceding paragraph are given hereunder:—

STATE REVENUE PER HEAD, 1911-12.

Particulars.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Taxation ...	1 2 6	1 2 1	1 5 4	1 6 4	1 3 11	1 15 2	1 3 9
Public Works & Services ...	5 13 8	4 3 9	5 1 6	6 4 5	7 19 7	1 17 3	6 3 8
Land ...	1 1 1	0 5 3	1 8 2	1 2 11	1 5 10	0 9 9	0 17 4
Commonwealth Subsidy ...	1 4 5	1 4 6	1 4 4	1 4 6	2 3 5	1 4 6	1 5 8
Miscellaneous ...	0 6 9	0 11 4	0 13 2	0 14 8	0 16 11	0 5 6	0 10 3
Total ...	9 8 5	7 6 11	9 12 6	10 12 10	13 9 8	5 12 1	9 0 8

The magnitude of the revenue per head from public works and services in the case of Western Australia is mainly due to the fact that the number of miles of railway in that State is large compared with the population, and that the revenue-earning power of the railways is also high.

6. **Relative Importance of Sources of Revenue.**—The following table furnishes an indication of the relative importance of the different sources of revenue in the several States, the figures given being the percentage which each item of revenue bore to the total for the State for the year 1911-12:—

PERCENTAGE OF TOTAL STATE REVENUE, 1911-12.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Taxation ...	11.95	15.00	13.15	12.40	8.88	31.39	13.13
Public Works and Services ...	60.31	57.02	52.74	58.44	59.17	33.18	57.39
Land ...	11.19	3.60	14.61	10.76	9.58	8.72	9.58
Commonwealth Subsidy ...	12.98	16.66	12.64	11.50	16.10	21.83	14.19
Miscellaneous ...	3.57	7.72	6.86	6.90	6.27	4.88	5.71
Total ...	100.00	100.00	100.00	100.00	100.00	100.00	100.00

One of the most noticeable features of the figures here given is the comparatively low percentage for "public works and services" and the high percentage for "taxation" in the case of Tasmania. In New South Wales and Queensland land revenue is an important item, while in Queensland the revenue from "public works and services" falls considerably below the Commonwealth average.

7. **State Taxation.**—(a) *Details, 1911-12.* Prior to the inauguration of Federation the principal source of revenue from taxation was the imposition of duties of Customs and Excise. At the present time the most productive forms of State taxation are the income tax, which is now imposed in all the States (Western Australia, the last of the States to adopt this method of taxation, having passed the necessary legislation during the Parliamentary session of 1907), and probate and succession duties. For 1911-12 stamp duties occupied third place. In addition to these a State land tax is now collected in all the States except Queensland, and license fees of various kinds are collected in all the States, while a dividend tax is collected in Western Australia. The total revenue from taxation collected by the States during the year 1911-12 was £5,419,668, details of which are set forth in the table given hereunder:—

STATE REVENUE FROM TAXATION, 1911-12.

Taxation.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.A.	Tas.	All States
	£	£	£	£	£	£	£
Probate and succession duties	849,405	448,283	144,309	95,667	22,276	35,012	1,594,952
Other stamp duties ...	255,085	285,212	187,533	106,910	74,828	64,236	973,804
Land tax ...	6,479	293,823	...	118,725	45,166	81,234	545,427
Income tax ...	644,571	443,248	372,497	207,416	53,987	143,875	1,966,049
Dividend tax ...	130,113	22,403	63,673	23,276	46,560	13,928	299,953
Licenses ...	...	8,727	19,565	...	9,042	2,149	39,483
Other taxation ...	...	...	...	...	...	...	...
Total ...	1,885,653	1,501,696	787,577	551,994	352,314	340,434	5,419,668

The most productive forms of taxation in the several States during the year 1911-12 were as follows:—New South Wales and Victoria, probate and succession duties; Queensland and South Australia, income tax; Western Australia, dividend tax; and Tasmania, land tax.

(b) *Summary, 1902-3 to 1911-12.* The total amount raised by means of taxation by the several State Governments during the ten years 1902-3 to 1911-12 is given in the following table:—

STATE REVENUE FROM TAXATION, 1902-3 to 1911-12.

Year.	New South Wales.	Victoria.	Queensland.	S. Australia.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1902-3	1,108,781	878,591	415,688	398,941	221,247	105,402	3,128,650
1903-4	1,100,193	938,147	475,184	353,432	235,114	150,091	3,252,161
1904-5	1,114,408	897,870	454,574	442,030	221,738	216,953	3,347,573
1905-6	1,297,776	990,735	494,165	369,756	260,609	248,799	3,661,840
1906-7	1,381,305	1,110,411	540,737	411,867	266,152	276,450	3,986,922
1907-8	1,077,534	977,620	525,540	477,637	277,463	265,656	3,601,450
1908-9	907,249	1,072,228	535,194	450,250	296,599	250,835	3,512,355
1909-10	1,223,521	1,088,353	584,997	481,003	336,396	303,390	4,017,660
1910-11	1,027,519	1,344,573	667,196	545,986	325,246	284,965	4,195,485
1911-12	1,885,653	1,501,696	787,577	551,994	352,314	340,434	5,419,668

During the nine years between 30th June, 1902-3, and 30th June, 1911-12, the aggregate State revenue from taxation increased by about 75 per cent., the increase varying considerably in the several States. Thus while South Australia shewed an increase of nearly 40 per cent., and Western Australia an increase of 60 per cent., the Queensland revenue advanced by 90 per cent., and that of Tasmania by about 225 per cent. The total increase in State taxation for the year amounted to £1,224,183.

The revenue from State taxation per head of population, collected in the several States during each of the years 1902-3 to 1911-12, was as follows:—

STATE TAXATION PER HEAD, 1901-2 to 1911-12.

Year.	New South Wales.	Victoria.	Queensland.	S. Australia.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1902-3	0 15 10	0 14 6	0 16 3	1 2 0	1 0 10	0 11 9	0 16 2
1903-4	0 15 5	0 15 7	0 18 4	0 19 7	1 0 10	0 16 5	0 16 7
1904-5	0 15 4	0 14 11	0 17 4	1 4 4	0 18 6	1 3 5	0 16 10
1905-6	0 17 5	0 16 4	0 18 7	1 0 2	1 0 10	1 6 8	0 18 2
1906-7	0 18 2	0 18 2	1 0 1	1 2 3	1 0 10	1 9 10	0 19 6
1907-8	0 13 9	0 15 10	0 19 3	1 5 3	1 1 10	1 8 0	0 17 3
1908-9	0 11 6	0 17 2	0 19 2	1 3 1	1 2 10	1 6 2	0 16 7
1909-10	0 15 2	0 17 0	1 0 3	1 4 3	1 5 4	1 11 5	0 18 7
1910-11	0 12 6	1 0 8	1 2 3	1 6 8	1 3 6	1 9 5	0 19 0
1911-12	1 2 6	1 2 1	1 5 4	1 6 2	1 3 11	1 15 2	1 3 9

Taking the States as a whole the State taxation increased by seven shillings and sevenpence per head during the nine years from 1902-3 to 1911-12, the most marked increase being that of twenty-three shillings and fivepence per head in the case of Tasmania. State taxation per head is at present highest in Tasmania and lowest in Victoria.

8. **Commonwealth and State Taxation.**—For the purpose of obtaining an accurate view of the extent of taxation imposed on the people of the Commonwealth by the central governing authorities it is necessary to add together the Commonwealth and State collections. This has been done in the table given hereunder, which contains particulars

concerning the total taxation for each of the years 1907-8 to 1911-12, as well as the amount per head of population:—

COMMONWEALTH AND STATE TAXATION, 1907-8 to 1911-12.

Particulars.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Commonwealth taxation ...	11,645,352	10,844,067	11,593,164	14,350,788	16,076,593
State taxation ...	3,601,450	3,512,355	4,017,660	4,195,485	5,419,668
Total ...	15,246,802	14,356,422	15,610,824	18,546,273	21,496,261
Taxation per head ...	£3 12 8	£3 7 2	£3 11 2	£4 3 10	£4 14 1

Whilst the Commonwealth taxation increased during the period by £4,431,241, the State taxation advanced by £1,818,218, the aggregate increase being £6,249,459. The amount has, however, fluctuated somewhat during the period, and has ranged between a minimum of £3 7s. 2d. per head in 1908-9 and a maximum of £4 14s. 1d. per head in 1911-12. The large increase in Commonwealth taxation in 1910-11 and 1911-12 is mainly due to the appearance for the first time of the Federal Land Tax.

9. **Public Works and Services.**—A very large proportion of the revenue of all the States of the Commonwealth is made up of the receipts from the various public works and services under the control of the several Governments. The principal of these are railways and tramways, harbour works, and water supply and sewerage, while in addition, State batteries for the treatment of auriferous ores exist in Western Australia, and various minor revenue-producing services are rendered by the Governments of all the States. For the year 1911-12 the aggregate revenue from this source totalled £23,690,269, or nearly 60 per cent. of the revenue from all sources. Details of revenue from public works and services for the year 1911-12 are as follows:—

STATE REVENUE FROM PUBLIC WORKS AND SERVICES, 1911-12.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and Tramways ...	8,067,597	5,237,466	3,032,929	2,145,634	1,896,579	314,708	20,694,913
Harbour Services ...	534,966	119,143	41,581	101,390	140,141	...	937,221
Public Batteries ...	...	241	...	...	45,798	...	46,039
Water Supply and Sewerage ...	643,442	*143,787	...	168,685	156,931	...	1,112,845
Other Public Services ...	269,598	207,323	84,415	185,221	107,503	45,191	899,251
Total ...	9,515,603	5,707,960	3,158,925	2,600,930	2,346,952	359,899	23,690,269

* Water Supply only.

10. **Land Revenue.**—The revenue derived by the States from the sale and rental of Crown lands has, with few exceptions, been treated from the earliest times as forming part of their respective Consolidated Revenue Funds, and has been applied to meet ordinary current expenses. Where the rentals received are for lands held for pastoral or for residential purposes, such application of the revenue appears perfectly justifiable. On the other hand, where the rentals are those of mineral and timber lands, and in all cases of sales of lands, such a proceeding is essentially a disposal of capital in order to defray current expenses. As a matter of financial procedure such a course is open to criticism. In the following table particulars of revenue derived from sales and rental of Crown lands are given for the year 1911-12:—

STATE LAND REVENUE, 1911-12.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Sales ...	962,821	211,952	257,679	347,428	243,350	60,300	2,083,530
Rentals ...	802,638	148,113	617,542	131,352	136,753	34,264	1,870,662
Total ...	1,765,459	360,065	875,221	478,780	380,103	94,564	3,954,192

11. **Commonwealth Subsidy.**—The payments to the States of Commonwealth subsidy represent in each instance a considerable proportion of the State's revenue, and for the year 1911-12 aggregated £5,858,744. This represents a great decline from the amounts received up to 1910, owing to the new system of allotting the subsidy. The percentage which the subsidy received by each State for 1911-12 was of the total revenue of that State is shewn in the following table:—

COMMONWEALTH SUBSIDY PAID TO STATES DURING 1911-12.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Commonwealth subsidy ...	2,046,993	1,667,657	737,087	511,719	638,527	236,761	5,858,744
Total revenue ...	15,776,816	10,009,796	5,989,347	4,450,739	3,966,673	1,084,663	41,278,034
Percentage of subsidy on revenue ...	12.98	16.66	12.64	11.50	16.10	21.83	14.19

The amount of subsidy here shewn is that for which the several States took credit during the year 1911-12. (See also page 800.)

12. **Miscellaneous Items of Revenue.**—In addition to the foregoing sources of revenue there are in each State several miscellaneous ones, including such items as interest, fines, fees, etc., which for the year 1911-12 aggregated £2,355,161.

(B) Disbursements.

1. **Heads of Expenditure.**—The principal heads of State expenditure from Consolidated Revenue Funds are :—

- (a) Interest and sinking funds in connection with public debt.
- (b) Working expenses of railways and tramways.
- (c) Justice.
- (d) Police.
- (e) Penal establishments.
- (f) Education.
- (g) Medical and charitable expenditure.
- (h) All other expenditure.

Of these items that of working expenses of railways and tramways was the most important, and for the year 1911-12 represented about 33 per cent. of the aggregate expenditure from the Consolidated Revenue Fund. Next in order for that year was the item of interest and sinking fund in connection with the public debt, then education, medical and charitable expenditure, police, other public works, and lands and surveys in the order named.

2. **Total Expenditure.**—The total expenditure from Consolidated Revenue Funds in the several States during each of the years 1902-3 to 1911-12 is furnished in the table given hereunder:—

**STATE EXPENDITURE FROM CONSOLIDATED REVENUE FUNDS,
1902-3 to 1911-12.**

Year.	N.S. Wales.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
1902-3 ...	11,467,235	6,759,960	3,717,806	2,641,789	3,521,763	850,685	28,959,238
1903-4 ...	11,319,888	7,339,608	3,607,864	2,707,254	3,698,312	879,356	29,552,282
1904-5 ...	11,195,075	7,343,742	3,581,403	2,860,894	3,745,224	840,184	29,566,522
1905-6 ...	11,386,864	7,261,475	3,725,712	3,004,974	3,632,318	853,147	29,864,490
1906-7 ...	11,876,657	7,679,143	3,911,797	3,394,999	3,490,182	913,762	31,266,540
1907-8 ...	12,095,593	7,862,246	4,373,097	3,862,336	3,379,006	929,885	32,502,163
1908-9 ...	12,893,662	8,240,177	4,759,231	3,760,005	3,370,530	960,237	33,983,842
1909-10 ...	13,038,150	8,579,980	5,113,578	4,196,493	3,447,732	997,321	35,373,254
1910-11 ...	13,807,538	9,194,157	5,314,737	4,181,472	3,784,448	1,016,963	37,249,315
1911-12 ...	15,277,001	9,999,342	5,965,692	4,450,739	4,101,082	1,064,725	40,858,581

As in the case of the table previously given for revenue, the above figures relate to the year ended 30th June, except in the cases of 1902-3, 1903-4, which contain Tasmanian figures for the years ended 31st December, 1902 and 1903 respectively.

3. **Expenditure per Head.**—Owing to the varying conditions of the several States and the extent to which the different functions of Government are distributed therein between central and local governing authorities, the expenditure per head from Consolidated Revenue Funds differs materially in the several States, being highest in the case of Western Australia and lowest in that of Tasmania. Four of the States, viz., Western Australia, South Australia, Queensland, and New South Wales are above the Commonwealth average per head, and the other two States below. The expenditure per head of population for each State for the years 1902-3 to 1911-12 is as follows:—

STATE EXPENDITURE PER HEAD, 1902-3 to 1911-12.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1902-3 ...	8 9 7	5 11 11	7 5 2	7 6 2	16 12 3	4 14 10	7 9 6
1903-4 ...	7 18 10	6 1 10	6 19 4	7 9 11	16 9 1	4 16 2	7 10 11
1904-5 ...	7 13 10	6 1 10	6 16 5	7 17 4	15 12 10	4 10 9	7 8 9
1905-6 ...	7 13 1	6 0 0	7 0 2	8 3 11	14 10 5	4 11 6	7 8 1
1906-7 ...	7 16 1	6 5 11	7 5 2	9 3 4	13 13 7	4 18 6	7 12 10
1907-8 ...	7 14 11	6 7 6	8 0 3	10 4 8	13 5 6	4 18 1	7 16 2
1908-9 ...	8 2 10	6 11 9	8 10 10	9 13 1	12 19 7	5 0 2	8 0 7
1909-10 ...	8 1 7	6 14 4	8 17 0	10 11 9	12 19 6	5 3 3	8 3 7
1910-11 ...	8 8 0	7 1 3	8 17 5	10 3 11	13 9 9	5 4 11	8 8 4
1911-12 ...	9 2 5	7 6 9	9 11 9	10 12 10	13 18 10	5 10 1	8 18 10

In all the States increases in the expenditure per head took place during the year 1911-12, ranging from 14s. 5d. per head in the case of New South Wales to 5s. 2d. per head in that of Tasmania.

4. **Details of Expenditure for 1911-12.**—The following table furnishes for the year 1911-12 particulars as to the expenditure of the several States under each of the principal heads:—

DETAILS OF STATE EXPENDITURE, 1911-12.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Public debt (int., sink'g fund, &c.)	3,889,023	2,312,107	1,724,304	1,379,676	1,101,560	462,597	10,869,267
Rlws. & tramways (work'g exps.)	5,422,085	3,356,714	1,915,246	1,395,839	1,354,847	221,175	13,665,906
Justice	291,971	182,271	87,170	34,866	58,605	11,372	666,255
Police	493,308	329,312	235,088	106,845	125,165	41,435	1,331,153
Penal establishments ...	81,473	50,814	27,707	17,539	23,718	5,320	206,571
Education	1,395,114	1,121,070	436,672	285,808	260,352	94,604	3,593,620
Medical and charitable ...	577,145	514,926	331,500	151,317	188,718	57,692	1,821,298
All other expenditure ...	3,126,882	2,132,128	1,208,005	1,078,849	988,117	170,530	8,704,511
Total ...	15,277,001	9,999,342	5,965,692	4,450,739	4,101,082	1,064,725	40,858,581

5. **Expenditure per Head, 1911-12.**—The expenditure per head of population of the several States for the year 1911-12, under each of the principal items, is given hereunder:—

STATE EXPENDITURE PER HEAD, 1911-12.

Particulars	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Public debt, (interest, sink- ing fund, &c.)	2 6 5	1 13 11	2 15 5	3 6 0	3 14 11	2 7 10	2 7 7
Railways and tramways (working expenses) ...	3 4 8	2 9 3	3 1 6	3 6 9	4 12 1	1 2 10	2 19 10
Justice	0 3 6	0 2 8	0 2 10	0 1 8	0 4 0	0 1 2	0 2 11
Police	0 5 11	0 4 10	0 7 7	0 5 1	0 8 6	0 4 3	0 5 10
Penal establishments ...	0 1 0	0 0 9	0 0 11	0 0 10	0 1 8	0 0 7	0 0 11
Education	0 16 8	0 16 5	0 14 0	0 13 8	0 17 8	0 9 9	0 15 9
Medical and charitable ...	0 6 11	0 7 7	0 10 8	0 7 3	0 12 10	0 6 0	0 7 11
All other expenditure ...	1 17 4	1 11 4	1 18 10	2 11 7	3 7 2	0 17 8	1 18 1
Total	9 2 5	7 6 9	9 11 9	10 12 10	13 18 10	5 10 1	8 18 10

In four of the States, viz., Western Australia, South Australia, Queensland, and New South Wales, the average State expenditure per head exceeded that for the Commonwealth as a whole, falling short of it in the other two States.

6. **Relative Importance.**—The relative importance of the items of expenditure enumerated above varies considerably in the several States. This will readily be seen from the following table, giving for each State the percentage of the expenditure under the various items, on the total expenditure for the State:—

PERCENTAGE OF TOTAL STATE EXPENDITURE, 1911-12.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Public debt (interest, sink- ing fund, &c.)	25.45	23.12	28.91	31.00	26.86	43.45	26.60
Railways and tramways (working expenses) ...	35.49	33.57	32.10	31.37	33.04	20.77	33.45
Justice	1.91	1.83	1.46	0.78	1.43	1.07	1.63
Police	3.23	3.29	3.94	2.40	3.05	3.89	3.26
Penal establishments ...	0.53	0.51	0.46	0.39	0.58	0.50	0.51
Education	9.13	11.21	7.32	6.42	6.35	8.89	8.79
Medical and charitable ...	3.80	5.15	5.56	3.40	4.60	5.42	4.46
All other expenditure...	20.46	21.32	20.25	24.24	24.09	16.01	21.30
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Taken together, the interest and sinking fund on the public debt, and the working expenses of the railways and tramways, represented for the year 1911-12 about 60 per cent. of the aggregate State expenditure.

(c) **Balances.**

1. **Position on 30th June, 1912.**—On various occasions in each of the States the revenue collected for a financial year has failed to provide the funds requisite for defraying the expenditure incurred during that year, the consequence being a deficit which is usually liquidated either by cash obtained from trust funds, or by the issue of Treasury bills. In some of the States a number of such deficits has occurred, interspersed with occasional surpluses, the result being an accumulating overdraft, which in certain instances assumed very large proportions. Thus during the period of financial stress resultant upon the crisis of 1893 and the drought conditions of succeeding years, the accumulated overdrafts of several of the States grew very rapidly. The very favourable financial conditions of recent years have enabled the various Treasurers to considerably reduce such liabilities from time to time, and at 30th June, 1912, the position of the balances of the several Consolidated Revenue Funds was as set forth in the table hereunder:—

STATE CONSOLIDATED REVENUE FUND BALANCES, 30th JUNE, 1912.

State.	Cash Credit Balances.	Debit Balance.		Net Result.
		Cash Overdraft.	Overdraft liquidated by Treasury Bills	
	£	£	£	£
New South Wales	61,363	...	114,516	Dr. 53,153
Victoria ... ..	...	294,175	...	Dr. 294,175
Queensland	23,655	...	...	Cr. 23,655
South Australia	275,150	...	...	Cr. 275,150
Western Australia	121,111	...	...	Cr. 121,111
Tasmania ... ..	...	2,587	75,610	Dr. 78,197
Total	481,279	296,762	190,126	Dr. 5,609

(D) **Principal State Taxes.**(a) **Probate and Succession Duties.**

1. **General.**—Probate duties have been levied for a considerable time in all the States of the Commonwealth. From the provisions of the several State Acts governing the payment of duty which are outlined hereunder, it will be seen that both the ordinary rates and those which apply to special beneficiaries differ widely in several cases. In the following table the amount under which the estates of deceased persons were sworn, is shewn for the years 1907 to 1911:—

VALUE OF ESTATES OF DECEASED PERSONS, 1906-7 to 1910-11.

State.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£
New South Wales	7,563,499	7,838,572	11,142,068	8,834,934	13,138,068
Victoria	6,860,143	7,128,085	6,480,376	7,430,949	8,469,163
Queensland	1,670,184	1,376,255	1,508,883	1,652,691	2,409,495
South Australia	1,923,954	2,105,351	1,939,509	2,422,519	2,855,089
Western Australia	1,154,126	955,995	939,318	868,638	844,151
Tasmania	841,227	1,023,629	722,011	797,439	596,870
Commonwealth	20,013,133	20,427,887	22,732,165	22,007,170	28,312,836

The duty collected in the several States for the financial years 1907-8 to 1911-12 is as follows:—

AMOUNT OF PROBATE AND SUCCESSION DUTIES COLLECTED, 1907-8 to 1911-12.

State.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
New South Wales ...	310,704	301,681	650,202	357,750	849,405
Victoria ...	304,830	418,418	358,173	433,104	448,283
Queensland* ...	42,788	57,012	61,193	71,637	144,309
South Australia ...	70,227	86,344	84,651	109,698	95,667
Western Australia ...	41,688	20,132	57,416	23,124	22,276
Tasmania ...	32,087	28,641	44,267	27,459	35,012
Commonwealth ...	802,324	912,228	1,255,902	1,022,772	1,594,952

* Approximate.

2. **New South Wales.**—(i.) *Legislation.* The Acts relative to probate and succession duties at present in force in New South Wales are, in chronological order, as follows:—

- (a) Wills, Probate and Administration Act 1898.
- (b) Stamp Duties Act 1898, and Amendment of, 1904.
- (c) Probate Duties (Amendment) Act 1899.
- (d) Administration (Validating) Act 1900.
- (e) Companies (Death Duties) Act 1901.
- (f) Administration Amending Act 1906.

The first-named Act, assented to on 27th July, 1898, repealed, amongst others, the Probate Act of 1890 (two sections excepted), and also the Probate Amendment Act of the same year. On the same day, 27th July, assent was also given to the Stamp Duties Act, the rates of duty contained in which were in force until the passing of the Probate Duties (Amendment) Act on 22nd December, 1899, when its schedule was repealed and a new rate of duty was imposed.

The Administration (Validating) Act of 1900 was passed in order to validate certain orders of the Supreme Court giving power or leave to sell, mortgage or lease, the real estate of deceased persons.

The Companies (Death Duties) Act of 1901 relates to the registration of any company incorporated according to the laws of some country other than New South Wales carrying on the business (a) of mining for any minerals in New South Wales; or (b) of pastoral or agricultural production or timber-getting in New South Wales; and to the imposition of duties on the death of shareholders of those companies.

(ii.) *Rates of Duty.* In lieu of the duties payable on probate and letters of administration as provided for by the Stamp Duties Act of 1898, the following rates are now payable on the total value of the estate of a deceased person after the deduction of all debts, as enacted by the Amending Act of 1899, viz.—Up to £1000, nil; above £1000 and up to £5000, 2 per cent.; then up to £6000, 3 per cent.; then increasing $\frac{1}{2}$ per cent. for each £1000 up to £10,000, for each £2000 up to £40,000, and for each £4000 up to £100,000, the last group, £96,000 to £100,000, being subject to 9 $\frac{1}{2}$ per cent. Above £100,000 the duty is 10 per cent. Property left by the deceased to his widow or children is subject to half the foregoing rates, if the total value of the estate, after the deduction of all debts, does not exceed £50,000.

3. **Victoria.**—(i.) *Legislation.* The Acts contained in the subjoined list regulate the probate and succession duties of Victoria:—

- (a) No. 1060, Administration and Probate Act 1890, with its amendments of 1891, 1892, 1898, 1903, and 1907.
- (b) No. 1419, Intestate Estates Act 1896.
- (c) No. 1827, Probate Charges Act 1903, and its amendment No. 1970 of 1905.
- (d) No. 1862, Administration and Probate Duties Act 1903, with its amendments of 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, and 1912.

The principal Act, the Administration and Probate Act 1890, was assented to on 10th July, 1890, and came into force on 1st August of the same year. It repealed Acts Nos. 338, 403, 427, 523, 900, 928, 1035 and 1053, and enacted a scale of duties which was enforced until 1st January, 1903, when the Administration and Probate Act of 1903 came into force.

(ii.) *Rates of Duty.* The last-mentioned Act provides for the following scale of duties on the estate, real and personal, of deceased persons, after the deduction of all debts, viz.:—Less than £200, nil; above £200 and up to £300, $1\frac{1}{2}$ per cent.; then increasing $\frac{1}{2}$ per cent. for each £100 up to £600; then increasing $\frac{1}{4}$ per cent. for each £200 up to £1000; above £1000 and up to £1500, 4 per cent.; then increasing $\frac{1}{4}$ per cent. for each £500 up to £6000; then increasing $\frac{1}{2}$ per cent. for each £1000 up to £19,000; with the exception of the two stages £10,000 to £11,000 and £14,000 to £15,000, which involve an increase of $\frac{2}{3}$ per cent. and whose rates are respectively $7\frac{1}{3}$ and $8\frac{1}{3}$ per cent.; over £19,000 and up to £20,000, $9\frac{1}{2}$ per cent.; and over £20,000, 10 per cent. is charged.

The rates of duty as shewn above also apply to all settlements of property, both real and personal, where the person taking the property is a brother or sister, or descendant of a brother or sister, or by any other person in any other degree of collateral consanguinity to the settlor, but duty at the rate of 10 per cent. is payable on the value of property taken by a stranger in blood to the settlor or donor.

(iii.) *Special Rates.* Property left by the deceased to his widow, children or grandchildren, is subject to the following rates, except that in cases where the total value of the estate after payment of all debts does not exceed £2000 half these rates only are charged:—Up to £500, nil; over £500 and up to £1000, 1 per cent.; over £1000 and up to £2000, 3 per cent.; then increasing by $\frac{1}{4}$ per cent. for each £1000 up to £5000, and by $\frac{1}{2}$ per cent. for each £1000 up to £8000; over £8000 and up to £10,000, 5 per cent.; increasing thence by $\frac{1}{2}$ per cent. for each £2000 up to £24,000, for each £4000 up to £80,000, and for each £5000 up to £100,000, the last group £95,000 to £100,000 being subject to $9\frac{3}{4}$ per cent.; over £100,000, the amount payable is 10 per cent.

4. *Queensland.*—(i.) *Legislation.* The collection of probate and succession duties in Queensland is governed by the following Acts:—

- (a) The Succession and Probate Duties Act 1892.
- (b) The Succession Act Amendment Act 1895.
- (c) The Succession and Probate Duties Amendment Act 1895.
- (d) The Succession and Probate Duties Act 1904.
- (e) The Succession Act 1906.
- (f) The Succession and Probate Amendment Act 1906.

The principal Act, the Succession and Probate Duties Act of 1892, which was assented to on 4th October, 1892, and taken as coming into force on 7th September previous, repealed the Succession Duties Act of 1886, and enacted a scale of duties which is still levied.

(ii.) *Rates of Succession Duty.* If the whole succession or successions derived from the same predecessor, and passing upon death to any person, amount in money or principal value to less than £200, no duty is payable; where the value is £200 and less than £1000, 2 per cent. is due; £1000 and less than £2500, 3 per cent.; £2500 and less than £5000, 4 per cent.; £5000 and less than £10,000, 6 per cent.; £10,000 and less than £20,000, 8 per cent.; and when the value is £20,000 or upwards, 10 per cent. is charged.

(iii.) *Special Rates.* Duty at one-half of the above rates is payable when the successor is the wife or husband, or the lineal issue of the predecessor; and at double the rates if the successor is a stranger in blood to the settlor.

(iv.) *Probate and Administration.* In addition to the foregoing succession duties a probate duty of 1 per cent. is payable on all estates having a net value of £300 or over. When the net value of the property of a deceased person does not amount to £300 it is exempt from duty.

(v.) *Exemptions.* Bequests for educational and charitable purposes in Queensland are exempt from taxation.

5. **South Australia.**—(i.) *Legislation.* Under the four Acts given hereunder the probate and succession duties are collected in South Australia:—

- (a) No. 537, The Administration and Probate Act 1891.
- (b) No. 567, The Succession Duties Act 1893.
- (c) No. 819, The Administration and Probate Act 1903.
- (d) No. 854, The Administration and Probate Amendment Act 1904.

On 25th October, 1893, the Succession Duties Act was assented to, and by it the Probate and Succession Duty Act of 1876, and its two amendments, Nos. 225 of 1881 and 361 of 1885, were repealed.

(ii.) *Rates of Duty.* On the property derived by any beneficiary the duties are assessed on the net value, and the following scale applies where the person taking the property is the widow, widower, descendant or ancestor of the deceased; and likewise where the property is given or accrues to any of the above-mentioned persons under a settlement or deed of gift:—Under £500, *nil*; over £500 and up to £700, $1\frac{1}{2}$ per cent.; over £700 and up to £1000, 2 per cent.; over £1000 and up to £2000, 3 per cent.; over £2000 and up to £3000, $3\frac{1}{2}$ per cent.; increasing thence by $\frac{1}{2}$ per cent. for each £2000 up to £7000; over £7000 and up to £10,000, 5 per cent.; increasing thence by $\frac{1}{2}$ per cent. for each £5000 up to £20,000, for each £10,000 up to £40,000, for each £20,000 up to £100,000, and for each £50,000 up to £200,000, the duty from £150,000 to £200,000 being $9\frac{1}{2}$ per cent.; above £200,000 the duty is 10 per cent.

Where the person taking the property is a brother, sister, descendant of a brother or sister, or any person in any other degree of collateral consanguinity to the deceased person, or where the property is given or accrues to any of the aforesaid persons under a settlement or deed of gift, the duty is reckoned on the net present value of such property, and is payable at the rates shewn hereunder:—Under £200, 1 per cent.; up to £300, $1\frac{1}{2}$ per cent.; up to £400, 2 per cent.; up to £700, 3 per cent.; up to £1000, $3\frac{1}{2}$ per cent.; up to £2000, 4 per cent.; thence increasing 1 per cent. up to each of the following amounts:—£3000, £5000, £10,000, £15,000, and £20,000; above £20,000 10 per cent. is payable.

If the person taking the property, either by will or under a settlement or deed of gift, is a stranger in blood to the deceased or the settlor or donor, as the case may be, duty is charged at the rate of 10 per cent. on the net present value of the property.

(iii.) *Special Rates.* Duty at one-half the rates shewn above is levied when the person who takes is the child under twenty-one years of age or the widow of the deceased or the settlor or donor, provided that the net value of the whole estate be under £2000.

6. **Western Australia.**—(i.) *Legislation.* The only Acts relating to probate and succession duties at present in force in Western Australia are the Administration Act of 1903, which was assented to on 31st December, 1903, and the Administration Act Amendment Act 1909. The former repealed a number of Acts, including the Real Estates Administration Act 1893 and the Duties on Deceased Persons' Estates Act 1895. The latter levied the following scale of duties:—

(ii.) *Rates of Duty.* When the total value of the estate, real or personal, of a deceased person, or of the property given or accruing to any person under a settlement or deed of gift, does not, after the deduction of all debts, exceed £500, duty is payable at

the rate of 1 per cent.; where the value exceeds £500, but does not exceed £1000, 2 per cent. is charged; £1000 and under £2500, 3 per cent.; £2500 and under £4500, 4 per cent.; £4500 and under £6000, 5 per cent.; £6000 and under £7000, 6 per cent.; £7000 and under £8000, 6½ per cent.; £8000 and under £9000, 6¾ per cent.; £9000 and under £10,000, 6½ per cent.; £10,000 and under £11,000, 7½ per cent.; £11,000 and under £12,000, 7¾ per cent.; £12,000 and under £13,000, 7¾ per cent.; £13,000 and under £14,000, 7¾ per cent.; £14,000 and under £15,000, 8½ per cent.; £15,000 and under £16,000, 8¾ per cent.; £16,000 and under £17,000, 8¾ per cent.; £17,000 and under £18,000, 8¾ per cent.; £18,000 and under £19,000, 9 per cent.; £19,000 and under £20,000, 9½ per cent.; £20,000 and above, 10 per cent.

(iii.) *Special Rates.* Half the above rates are charged the parent, issue, husband, wife, and issue of husband or wife, who are *bona-fide* residents of, and domiciled in, Western Australia.

7. **Tasmania.**—(i.) *Legislation.* The duties imposed in connection with probates and letters of administration in Tasmania are provided for by the following Acts:—

- (a) The Deceased Persons' Estates Act of 1874 and 1881.
- (b) The Probate (Foreign) Act 1893.
- (c) The Probate Act 1893, with amendment in 1906.
- (d) The Deceased Persons' Estate Management Act 1903.
- (e) The Deceased Persons' Estates Duties Act 1904.
- (f) The Death Duties (Deductions) Act 1909.

The Probate Duties Act of 1868 levied a scale of rates which remained in force until the passing of the Deceased Persons' Estates Duties Act in 1904, when the former Act was repealed and a new schedule came into operation. The Death Duties (Deductions) Act provides for the deduction from death duties of the amount of duty payable in the United Kingdom in respect of property situated therein.

(ii.) *Rates of Duty.* Duty at the rates given below is payable on the property derived from a deceased person, or comprised in a settlement or deed of gift in so far as it includes, or is a portion of—

- (a) His real and personal property in Tasmania, including that over which he had a general power of appointment, exercised by his will, or by the settlement or deed of gift, if the deceased was, at the time of his death, domiciled in Tasmania.
- (b) His personal property, as above, including all debts, money, etc., recoverable in action by the executor in Tasmania, if the deceased was, at time of death, domiciled elsewhere than in Tasmania; and
- (c) Property accruing to any husband by virtue of his right as husband on the decease of his wife.

When the value of the property of the deceased person, settlor, or donor, as the case may be, at the time of his death exceeds £500, and does not exceed £1000, 2 per cent. is payable; exceeding £1000 and not exceeding £2000, 2½ per cent.; £2000 and not over £5000, 3 per cent.; £5000 and not over £20,000, 4 per cent.; £20,000 and not over £100,000, 5 per cent.; and over £100,000, 10 per cent.

(iii.) *Special Rates.* Double the above rates are charged when the property is derived by, or given or accrues to a brother or sister, or the child of a brother or sister of the deceased person, settlor, or donor, but in no case is a duty of more than 10 per cent. payable. When the property is derived by a stranger in blood to the deceased person, settlor, or donor, or accrues to any collateral relation beyond the third degree, the duty is 10 per cent. on the value of the property of any value whatever. No duty is payable in respect of any money which is payable to any person by a friendly society upon the death of a member or his wife or child.

(b) Stamp Duties.

1. **Legislation in the Several States.**—The principal Acts at present in force in the several States relating to stamp duties are as follows:—

- (a) *New South Wales.* Stamp Duties Act 1898, with amendments in 1900, 1904, and 1907.
 (b) *Victoria.* Stamps Act 1890, with amendments in 1892, 1900, 1904, and 1908.
 (c) *Queensland.* Stamp Act 1894, with amendment in 1904.
 (d) *South Australia.* Stamp Act 1886, with amendment in 1902.
 (e) *Western Australia.* Stamp Act 1882, with amendments in 1905 and 1906.
 (f) *Tasmania.* Stamp Duties Act 1882, with amendments in 1886, 1888, 1892, 1900 and 1904.

These Acts provide for the payment of duty on bank notes, bills of exchange, and promissory notes, deeds, leases, policies, receipts, transfers, and so forth, all of which with the exception of bank notes are required to be stamped either by an impressed or adhesive stamp, as the case may be.

The revenue derived by the several States of the Commonwealth from the imposition of stamp duties for the years 1907-8 to 1911-12 is shewn in the accompanying table :—

**STAMP REVENUE (EXCLUSIVE OF PROBATE AND SUCCESSION DUTIES),
1907-8 to 1911-12.**

State.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
New South Wales	254,538	205,022	222,720	268,091	255,085
Victoria	240,535	237,681	250,358	275,314	285,212
Queensland	142,573	132,078	145,556	174,051	187,533
South Australia	79,547	89,160	97,877	109,274	106,910
Western Australia	59,617	58,065	62,714	79,404	74,828
Tasmania	58,832	53,718	54,741	61,118	64,236
Commonwealth	835,642	775,714	833,966	967,252	973,804

2. Bank Notes.—Promissory notes issued by any bank are not required to bear a duty stamp either impressed or adhesive, and may be reissued as often as thought fit. An annual composition has, however, to be paid in lieu of stamp duty. This composition is payable quarterly, and is the same in all States, being at the rate of £2 per annum on every £100 or part thereof of the average annual amount of bank notes in circulation. On 2nd June, 1893, the Treasury Notes Act of Queensland was assented to, by which the issue of Treasury notes payable on demand was authorised. These notes were used exclusively by the banks in that State, but their issue has been prohibited by the Federal Bank Note Tax Act, and they have now almost passed out of circulation. (See Section xxi., Private Finance.)

The issue of bank notes by any bank is likely to be seriously restricted in the future by this Act, which passed the Federal Parliament in the session of 1910, and was assented to on 10th October, 1910. Further reference is made to the Act in the section dealing with Private Finance. It is enough to say here that it imposes a tax of 10 per cent. per annum on all bank notes issued or reissued by any bank in the Commonwealth after the commencement of the Act and not redeemed.

3. Bills of Exchange and Promissory Notes.—(i.) *Rates.* In all the States except New South Wales, when a bill of exchange or promissory note is payable on demand, the rate charged is one penny. When the bill was not payable on demand the duty levied in New South Wales, until the Amendment Act of 1907 came into force on 1st January, 1908, was sixpence for every £25 or part thereof, but under this Act no duty is now payable on bills of exchange or promissory notes in that State. The rate in Victoria for all bills of exchange was sixpence for every £25* up to £100, and one shilling for every £50 over £100, but under the Act of 1908 these rates only apply to those bills both drawn in and payable in Victoria, all others being free from duty. One shilling is charged in Queensland for every £50. For every £25 the duty in South Australia is sixpence if the bill is

* "Or fractional part thereof" is to be understood after all amounts mentioned.

negotiable in the Commonwealth, but when a bill is drawn in South Australia and payable in any place beyond the Commonwealth, one shilling is charged for every £100, in which case an adhesive stamp only is to be used. In Western Australia, when the amount of the bill does not exceed £25 the duty payable is sixpence, when it exceeds £25 the duty is increased by sixpence for every £25 up to £100, and when it exceeds £100, one shilling for every £50 is charged. An amount of threepence is levied in Tasmania for a bill not exceeding £5; sixpence for one exceeding £5 and under £25; and an additional sixpence for every succeeding £25.

(ii.) *Exemptions.* The chief classes of bills which are exempt from taxation are Government debentures, Treasury notes, drafts on account of Public Service, drafts by banker on banker, letters of credit in the State, etc.

4. **Bills of Lading.**—(i.) *Rates.* The charge made for a bill of lading or copy thereof is sixpence in four of the States, viz., New South Wales, Victoria, South Australia, and Tasmania. In Queensland the rate is one shilling, and for a receipt of a bill of lading sixpence, whilst in Western Australia the duty is threepence if the goods do not exceed half a ton in weight or measurement, and sixpence if the goods exceed that quantity. The Acts provide that no bill of lading is to be stamped after its execution.

5. **Receipts.**—(i.) *Rates.* The duty payable on receipts given on payment of the amount of £2 or upwards in the States of Victoria, South Australia and Western Australia is one penny. Under the provisions of the Stamp Duties Act of 1898 the rate in New South Wales was twopence for £2 or over, but this was repealed by the Stamp Duties Amendment Act of 1907, and no duty is now payable on receipts in that State. Acknowledgments for payment of £1 or upwards were taxed one penny in Queensland under the 1894 Act, but by Amendment Acts of 1901, 1903 and 1904, the first two of which have since been repealed, it was provided that amounts of £1 and less than £2 were to be taxed one penny; £2 and less than £50, twopence; £50 and less than £100, threepence; and £100 or over, sixpence for every £100 or part thereof. By the 1904 Amendment Act of Tasmania, receipts for sums amounting to £2 and not over £5 are subject to a duty of one penny, and when the amount exceeds £5, one penny is charged for every additional £10 or part thereof, provided that the maximum duty on any receipt is fourpence.

(ii.) *Exemptions.* The exemptions from payment of duty on receipts vary considerably in the several States, and amongst others may be mentioned the following:—On His Majesty's Service, banker's receipt for bill of exchange or promissory note, current accounts, savings bank accounts, municipal rates, money orders and postal notes, wages received by labourers, workmen, menial servants, etc.

(c) Land Tax.

1. **General.**—Queensland is the only State in the Commonwealth in which a State land tax is not levied, although it was as recently as 1907 that the first tax on land was imposed in Western Australia. In all of the other States the tax dates back to a much earlier period.

The following table shews the amount collected by means of such taxes during the financial years 1907-8 to 1911-12 in the States in which a land tax was imposed:—

LAND TAX COLLECTIONS, 1907-8 to 1911-12.

State.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
New South Wales	178,889	80,794	9,066	7,488	6,479
Victoria	89,496	85,559	114,357	210,640	293,823
South Australia	93,762	92,158	94,126	135,614	118,725
Western Australia	11,140	33,120	34,344	37,871	45,166
Tasmania	57,742	59,651	79,021	64,932	81,234
Commonwealth	431,029	351,282	330,914	456,495	545,427

2. **New South Wales.**—(i.) *Legislation.* The following Acts relating to the levying, assessment, and collection of land tax are at present in force in New South Wales:—

- (a) Land and Income Tax Assessment Act 1895, with amendments in 1896, 1897, 1898, and 1904.
- (b) Land Tax Act 1895, with amendments in 1899, 1900, and 1902.
- (c) Local Government Act 1906.

The principal Act, the Land and Income Tax Assessment Act of 1895, which was enacted for the purpose of establishing a system of direct taxation by means of a tax on land, as well as for other objects, was assented to on 12th December of that year. The Land Tax Act of 1895, assented to on the same day as the above-mentioned Act, provided for a tax which was amended in respect of certain leased lands by the amending Act of 1902, and suspended in cases, which will hereinafter be referred to, by the Local Government Act of 1906.

(ii.) *Rates.* Under the provisions of the principal Act a tax is levied on the unimproved value of all land after the deduction of £240, which deduction is only made once in the case of an owner of more estates than one. Land that is subject to mortgage is liable to a deduction each year from the tax on the unimproved value of a sum equal to the income tax leviable for that year on the interest derivable from the whole mortgage on the land, improvements included. A tax of one penny in the £ of the unimproved value was declared by the Land Tax Act of 1895. The Act of 1902, which only applies to land while it is subject to a lease from the owner which was current at the end of the year 1902, and of which not less than thirty years were at such time unexpired, and land that is subject to a lease from the owner made after the commencement of the Act for a term of not less than thirty years, provided for a similar tax to be paid conjointly by owners and lessees, according to an adjustment made by the Commissioners. Under the Local Government Act of 1906 the operation of the land tax is suspended in the case where a shire or municipality has levied a tax on the unimproved capital value of the ratable land within its boundaries.

(iii.) *Exemptions.* Some of the principal lands on which no taxation is payable are as follows:—

- (a) Crown lands which are not liable to right of purchase, and lands held by way of conditional or special lease and homestead selections under any Crown Lands Act.
- (b) Lands vested in His Majesty or in any person for or on behalf of His Majesty.
- (c) Land vested in the Railway Commissioners.
- (d) Public roads and thoroughfares; reserves for health, recreation or enjoyment, parks, cemeteries, etc.
- (e) Lands occupied or used exclusively for public hospitals, benevolent and charitable institutions, churches, universities, affiliated colleges, mechanics' institutes, etc., and lands on which are erected public markets, town halls, etc., and land vested in any council, municipality, hospital, or affiliated college.
- (f) Land vested in trustees for the use of agricultural, horticultural, pastoral or zoological show purposes.
- (g) Land used exclusively for the site of a residence of a minister of religion ministering at some place of public worship, and land used as a site for a school attached to, or connected with, any place of public worship.

3. **Victoria.**—(i.) *Legislation.* The Land Tax Act of 1910, which repealed the Act of 1890, now governs the taxation of land in Victoria. Under this Act a tax is levied on all land whose unimproved value exceeds £250. As the unimproved value rises above £250 the exemption diminishes at the rate of £1 for every £1 of excess, so as to leave no exemption at £500. There is a uniform rate of $\frac{1}{4}$ d. per £ of unimproved value, and no amount less than two shillings and sixpence is collected.

The subjoined is a list of the principal lands that are free from taxation :—

- (a) Land, the property of His Majesty the King.
- (b) Land used for public worship, recreation, or educational purposes ; all parks, show-grounds, etc. ; the University and its affiliated Colleges.
- (c) Land vested in a municipality or a church.
- (d) Land vested in Railway Commissioners, Commissioner of Savings Banks, Melbourne and Geelong Harbour Trusts, Melbourne and Metropolitan Board of Works, etc.

4. **South Australia.**—(i.) *Legislation.* The administration of the land tax in South Australia is governed by the following Acts :—

- (a) Taxation Act 1884, with amendments in 1885, 1887, 1894, 1900, 1902, 1903, 1904, and 1905.
- (b) Increase of Taxes Act 1902.

On 14th November, 1884, the principal Act, viz., the Taxation Act, was assented to. It provided for a tax to be paid on the unimproved value of any land in the State of South Australia, but the rate was increased by subsequent Acts, as will be shown below.

(ii.) *Rates.* The principal Act declared a tax of one half-penny for every £1 sterling in the amount of the taxable value, and the amending Act of 1894 imposed an additional tax of one half-penny for every £1 exceeding the amount of £5000 of the total assessed unimproved value owned by any party. Under the provisions of the Increase of Taxes Act of 1902 the general rate was augmented by one farthing in the £1 for the year 1903 only. This was repeated in 1904 for the year 1905 only. The last-mentioned Act also increased by one farthing the tax payable on land valued over £5000, as provided in the Act of 1894 for the one year only, the present rate payable on property exceeding £5000 in value being, therefore, one penny for every £1 of the total assessed unimproved value over that amount. In the case of absentees an addition of 20 per cent. to these rates is provided for under the Amending Act of 1894. Under this Act absenteeism consisted of absence from the State of South Australia for the period of two years prior to the date on which the tax became due, but the duration of absence was reduced to twelve months by the Amendment Act of 1904.

(iii.) *Exemptions.* The subjoined is a list of lands that are free from taxation :—

- (a) Land of the Crown which, for the time being, is not subject to any agreement for sale or right of purchase.
- (b) Park lands, public roads, cemeteries, and reserves.
- (c) Land used solely for religious or charitable purposes, or by any public institute.

5. **Western Australia.**—(i.) *Legislation.* The Land and Income Tax Assessment Act of 1907—the first Act relating to the payment of a tax on land in Western Australia—was assented to on 20th December, and came into force on 1st January following. A tax on the unimproved value of land was imposed by the Land Tax and Income Tax Act, which received assent and came into force on the same day as the above-mentioned Act.

(ii.) *Rates.* A tax at the rate of one penny for every pound sterling of the unimproved value of land is charged, provided that the aggregate value of the land held exceeds £50. A rebate of one half of the tax levied is allowed to every owner of improved land.

(iii.) *Exemptions.* The lands specified below are exempt from assessment for taxation :—

- (a) All lands held by or on behalf of His Majesty.
- (b) Public roads and thoroughfares, public reserves for health, recreation, or enjoyment, and public parks, university endowments, cemeteries and commons.
- (c) Land used in connection with any public hospital, benevolent, charitable or religious institution, mechanics' institute, school of arts, etc., and land on which is erected any State market, town hall, or municipal chambers.

- (d) All lands held as mining tenements, and lands dedicated to, or vested in trustees, and used for zoological, agricultural, pastoral, or horticultural show purposes, or other public scientific purposes.
- (e) Land, the unimproved value of which does not exceed £50.

6. **Tasmania.**—(i.) *Legislation.* The Land Tax and Income Tax Act of 1910 governs this form of taxation in Tasmania. According to it a land-owner pays in respect of every pound sterling of unimproved value according to the following scale:—

(ii.) *Rates.* When the total unimproved value is less than £2500, 1d. in the pound is payable; £2500 and under £5000, 1½d.; £5000 and under £15,000, 1½d.; £15,000 and under £30,000, 1¾d.; £30,000 and under £50,000, 2d.; £50,000 and under £80,000, 2½d.; £80,000 and above, 2¾d.

(iii.) *Exemptions.* The number of exemptions as contained in the principal Act is too lengthy to be given in detail, and a few of the most important only are herewith appended:—

- (a) Lands of the Crown which, for the time being, are not subject to lease, sale, etc., and land the property of and occupied by or on behalf of His Majesty.
- (b) Botanical gardens at Hobart and Launceston.
- (c) Public roads, cemeteries, reserves, and recreation grounds.
- (d) Land on which is built any public library, museum, hospital or any building used solely for charitable or religious purposes, or State Schools.
- (e) Any land owned by any local authority, or any local governing or statutory public body.

(d) **Income Tax.**

1. **General.**—A duty on the income of persons, whether it be derived from personal exertion or from the produce of property, is now imposed in all the States of the Commonwealth. As will be seen in dealing with the different States, the rates, exemptions, etc., are widely divergent, but the general principle of the several Acts is strikingly consistent. The Dividend Duties Acts of Queensland and Western Australia—the former of which is now repealed—supplied to a certain extent the place of an income tax in those States in former years, but, with the increasing demands upon the State Treasury, the levying of a direct income tax has been resorted to.

In the following table particulars are furnished concerning the total amount collected in the several States during the years 1907-8 to 1911-12. In the case of Queensland and Western Australia the amount of dividend duty collected is included, this tax being closely allied to the income tax.

INCOME AND DIVIDEND TAXES, 1907-8 to 1911-12.

(STATES.)

State.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
New South Wales ...	215,283	202,369	219,977	269,142	644,571
Victoria ...	317,354	304,464	333,585	395,998	443,248
Queensland ...	271,299	273,091	304,693	348,513	372,497
South Australia ...	212,643	160,777	180,923	168,707	207,416
Western Australia ...	113,967	134,164	132,180	134,075	154,442
Tasmania ...	101,433	94,015	110,258	115,836	143,875
Commonwealth ...	1,231,979	1,168,880	1,286,616	1,432,271	1,966,049

2. **New South Wales.**—(i.) *Legislation.* The Act under which the administration of the income tax is carried out in New South Wales is as follows:—

Land and Income Tax Assessment Act 1895, with amendments in 1896, 1897, 1898, 1904, 1911, and 1912.

The Land and Income Tax Assessment Act, which was assented to on 12th December, 1895, and came into force on the first day of the following year, is the principal Act. Under this Act the amount of taxable income from all sources for the year immediately preceding the year of assessment is the amount on which tax is payable, except in the case of income earned outside the State of New South Wales, which is not subject to taxation. The 1898 Act declared that for the purposes of taxation, the extracting from the soil, winning, producing, or manufacturing in the State of any product, commodity or substance and its export, is part of the carrying on of such trade in New South Wales, and the value of such product, etc., when exported, is income earned in the said State. The 1911 Act repealed the Income Tax Act of 1895 with its amendment of 1907, and also the Taxation Amending Act of 1906. It also amended the Taxation Amending Act of 1905, and entirely altered the rates originally imposed by the Income Tax Act of 1895. The Act of 1912 repealed the Taxation Amending Act of 1905, and a large part of the Act of 1911.

(ii.) *Rates.* Under the Act of 1912 the rates payable in New South Wales are as follows:—

- (a) In the case of a person, in possession of an income not exceeding £700 per annum, 6d. in the £. There is an addition of one-third if the person is an absentee, and an addition, or further addition, in any case, of one-third on such part of income as is derived from property.
- (b) If income exceeds £700 then tax is as in following schedule:—£700 to £1700, 7d.; £1700 to £2700, 8d.; £2700 to £4700, 9d.; £4700 to £6700, 10d.; £6700 to £9700, 11d.; and above £9700, 1s. in the £. In addition, the same rates as regards absentees, etc., mentioned in (a) above also apply.

(iii.) *Exemptions.* The subjoined is a list of incomes, revenues, and funds which are exempt from the payment of income tax:—

- (a) Income not exceeding £300 per annum.
- (b) Revenues of municipal corporations or other local authorities.
- (c) Incomes of mutual life assurance societies, and of other companies or societies not carrying on business for purposes of profit or gain.
- (d) Dividends and profits of the Savings Bank of New South Wales, the Post-office Savings Bank, and the income of registered friendly societies.
- (e) Incomes and revenues of all ecclesiastical, charitable, and educational institutions of a public character.
- (f) Income derived from the ownership, use, or cultivation of land subject to land tax.

The exemptions declared in sub-sections (b) to (e) above do not extend to the salaries and wages of persons employed by such corporations, companies, etc.

(iv.) *Deductions.* In the case of a company the person liable to taxation in respect of an income exceeding £300 is, under the Act of 1911, entitled to a deduction of £300 in the assessment of such income. This Act also provides that there shall be a reduction of £50 for each child who is wholly maintained by a taxpayer, and who at the commencement of the year in respect of which the tax is levied is under the age of 18 years. Any such reduction shall in the first place be made from so much of the income as is derived from personal exertion. But where the income so derived is less than the amount of reduction authorised, the reduction shall be made to the full extent of such income, and the

balance not so applied shall be deducted from the income derived from property. Where there is no income derived from personal exertion, the deduction is made from income from property.

In addition to the above, deductions are allowed on account of losses, repairs, cost of earning incomes, etc., and also on account of expenditure not exceeding £50 per annum on life insurance.

3. Victoria.—(i.) *Legislation.* The principal Act in Victoria, the Income Tax Act of 1895, was assented to on 29th January of that year. On the 24th December following the Income Tax Rate Act received assent, and since then, with one exception, an Act has been passed each year declaring rates for the year ending 31st December following the date on which the Act came into force. The first scale of taxation was provided for by the Income Tax Rate Act 1895, and remained in force until 1st January, 1903, when the first amendment of 1903 came into force. The rates contained in the latter Act were superseded when the second amendment of 1903 came into operation, and were further altered by the 1904 Act, the rates of which are in force at present.

(ii.) *Rates.* Under the provisions of the last-mentioned Act a person, not being a company, is subject to the following rates of duty on the amount of his income from personal exertion, viz.—For every £1 up to £500, threepence; over £500 and up to £1000, fourpence; £1000 and up to £1500, fivepence; and over £1500, sixpence; with double these rates if the income be derived from property. Incomes not exceeding £156 were exempt from taxation under this Act, and this exemption was, under the 1906 Act, increased to £200, at which sum it still stands. The minimum income subject to tax is thus £201. Incomes between £201 and £500 are allowed an exemption of £150, while those above £500 pay tax on the full amount. The Act of 1908 provided that the amount of income tax, computed on the above basis, to be payable by a person, not being a company, for the year ending 31st December, 1909, should be reduced by 20 per cent., but this reduction was repealed in 1910. Land used as a residence by the owner is deemed to return 4 per cent. on its actual capital value.

(iii.) *Special Rates.* (a) A tax of sevenpence is levied on the income of any company liable to tax, not being a life assurance company, for every pound sterling of the taxable amount thereof, and a similar tax of eightpence on a company which carries on in Victoria the business of life assurance; and (b) a tax assessed on five pounds in every £100 of the amount payable to him for the carriage of passengers, live stock, mails, or goods shipped in Victoria, is imposed on every owner or charterer of a ship whose principal place of business is out of Victoria.

(iv.) *Exemptions.* Some of the most important exemptions from taxation are as follows:—

- (a) Persons whose income does not exceed £200.
- (b) Income of a Governor, a Minister of the Crown as such, Board of Land and Works, Railway Commissioners, Harbour Trust, Board of Works, Fire Brigades, Savings Bank, University, Working Men's College, or any Public College affiliated to the University.
- (c) Incomes of religious bodies, income (except that from trade) of registered friendly, provident, building and trade union societies.
- (d) Trust societies, associations, etc., not carrying on business for purposes of gain to members, except income from trade; companies, persons, or firms, licensed under the Stamps Acts, so far only as regards fire, fidelity, guarantee or marine insurance business.
- (e) Interest accruing to any person from stock, debentures or Treasury bonds of the Government of Victoria, or interest accruing to any person not resident in Victoria from stock, debentures or bonds issued by any public or municipal trust, body or corporation.

(v.) *Deductions.* Expenditure incurred in Victoria by any taxpayer in the production of his income, and all taxes payable by him (income tax excepted) are allowed to be deducted from the gross amount of his income, as is also the amount of all premiums not exceeding £50 paid by a taxpayer in respect of life assurance policies on his own life, but no deduction by way of exemption from income tax is permitted for the maintenance of the families of taxpayers.

4. **Queensland.**—(i.) *Legislation.* The laws under which the income tax of Queensland is regulated are contained in the Income Tax Act of 1902, and its amendments of 1902, 1904, 1905, 1906, and 1907. The first-named, which is the principal Act, was assented to on 1st December, 1902. The Dividend Duty Act of 1890, which imposed a tax on the dividends declared by public companies having their head office or place of business in Queensland, was repealed by the Income Tax Amendment Act of 1904, and in lieu thereof the rates that are shewn in (c) below are enforced.

(ii.) *Rates.* The present rates of duty as laid down in the Amendment Acts of 1906 and 1907 are as follows, provided that the total income of a person, not being a company or an absentee, exceeds £200 :—

- (a) On the income derived from personal exertion :—Where the total income does not exceed £500 the tax levied is sixpence for every pound; where it exceeds £500 and does not exceed £1000, sixpence for every pound of the first £500 and sevenpence for every pound over £500; where it exceeds £1000 and does not exceed £1500, sevenpence for every pound of the first £1000 and eightpence for every pound over £1000; and when the income exceeds £1500, eightpence for every pound is payable.
- (b) On the income derived from the produce of property the rate is ninepence for every pound.
- (c) On the income of all companies, or of an absentee, that is, a person not domiciled in Australia, one shilling in the pound is charged, provided that in the case of a company whose head office is in Queensland, the income is assessed at not less than the amount of dividends declared during the year, and if the profits remain undistributed amongst the shareholders, only sixpence in the pound is payable upon such undistributed profits. In the case of foreign companies, that is, companies whose head office is outside Queensland, special rules are given in the Act for determining the taxable amount of income.

(iii.) *Exemptions.* Included in the list of exemptions are the following incomes which are free from taxation :—

- (a) Income of a person, not being a company, which does not exceed £200.
- (b) Income of the Governor of Queensland, and the revenues of local bodies derived for purposes of local self-government.
- (c) Incomes of societies and institutions not carrying on business for purposes of profit or gain, and of any registered friendly societies.
- (d) Incomes and revenues of religious, charitable, and educational institutions of a public character.
- (e) Incomes arising or accruing from debentures, stock or Treasury Bills issued by the Government of Queensland, or derived as dividends from any company which has paid in Queensland income tax on the profits from which such dividends are paid.

(iv.) *Deductions.* When the income of a person, not being a company or an absentee, exceeds £200 per annum, the deduction of £200 is, in the first place, made from the

income, if any, derived from personal exertion. The amount of all premiums not exceeding £50 paid by a taxpayer in respect of life assurance policies, or into any superannuation fund, etc., and all losses and outgoings actually incurred in Queensland by him in production of his income, are also amongst the deductions which are allowed.

5. South Australia.—(i.) *Legislation.* Under the Acts given herewith the income tax of South Australia is collected :—

- (a) Taxation Act 1884, with amendments in 1885, 1887, 1894, 1900, 1902, 1903, 1904, 1905, and 1908.
- (b) Additional Income Tax Act 1893.
- (c) Income Tax Continuance Act 1893, with amendments in 1897 and 1898.
- (d) Increase of Taxes Act 1902.

On the 14th November, 1884, the principal Act, the Taxation Act, was assented to. The rates of duty enforced thereby were superseded in order by the Additional Income Tax Act of 1893, the Amendment Act of 1894, the Increase of Taxes Act of 1902, and the Amendment Act of 1903, the scale enacted by the latter Act still remaining in operation.

(ii.) *Rates.* Under the last-mentioned Act the income of every person of the value of £200 or over is subject to a tax of fourpence half-penny for every pound up to and inclusive of £800, and sevenpence for every pound above that amount if the income be derived from personal exertion ; but if the income consist of the produce of property, the rate is ninepence for every pound up to and inclusive of £800, and thirteence half-penny for every pound above the sum of £800. A tax of £5 on every £100 received by foreign shipping companies is imposed under the Act of 1908.

(iii.) *Exemptions.* The following incomes are not subject to the payment of income tax :—

- (a) Income of every person under the value of £200.
- (b) Income of municipal corporations and district councils.
- (c) Income of companies, public bodies and societies, not carrying on business for the purpose of gain to be divided among the shareholders, and the income of all friendly societies.
- (d) Income derived from land on which land tax is payable, provided that such income does not exceed 5 per cent. of the actual value thereof.
- (e) Income derived from land and produced by personal exertion where the land does not exceed £1000 in unimproved value.

(iv.) *Deductions.* All expenses, etc., actually incurred by a taxpayer in the production of his income are deducted from the gross amount of his income. If he has been out of South Australia for twelve consecutive months prior to the date on which the tax falls due, or if his net income from all sources exceed £400, no deduction of any kind is allowed. In the case of an income which exceeds £200, that sum is deducted from the net amount of income derived from the produce of property, but if such income does not amount to £200, the difference is taken from that derived from personal exertion. No deductions are allowed for (a) cost of maintenance of a taxpayer and his family or establishment ; (b) cost of implements, etc., for purposes of the trade, except renewals for wear and tear ; or (c) domestic and private expenses.

6. Western Australia.—(i.) *Legislation.* On the 20th December, 1907, the first Income Tax Act of Western Australia received assent under the title of the Land and Income Tax Assessment Act 1907, and on the same day the Land Tax and Income Tax Act was passed, declaring rates for the year ending 30th June, 1908. A similar Land Tax and Income Tax Act is passed each year declaring the rates to be levied for the current financial year.

(ii.) *Rates.* A tax of fourpence in the pound is levied on the annual amount of all incomes exceeding £200 per annum. An additional 50 per cent. is payable on the income of any person who has not been resident in the Commonwealth of Australia during any part of the year preceding the year of assessment, provided that he has not been absent on public service.

(iii.) *Exemptions.* The following are the most important cases of incomes, revenues, and funds exempt from income tax :—

- (a) Incomes not exceeding £200 per annum.
- (b) Revenues of municipal corporations, road boards, or other statutory public bodies.
- (c) Incomes of life assurance companies and of companies or societies not carrying on business for the purpose of profit or gain.
- (d) Dividends and profits of companies subject to duty under the Dividend Duties Act, and of the Government Savings Bank and Agricultural Bank.
- (e) Income of the Governor of Western Australia, and of all ecclesiastical, charitable and educational institutions of a public character.
- (f) Incomes arising or accruing to any person from Western Australian Government debentures, inscribed stock, and Treasury Bills.
- (g) Income derived from land on which land tax is payable.

(iv.) *Deductions.* Sums expended by a taxpayer for repairs of premises, and expenses, etc., incurred in the production of his income are deducted from the amount on which duty is payable; as are also sums not exceeding £50 in the aggregate which are paid as life assurance premiums or in connection with fidelity guarantees or bonds. The amount paid to a taxpayer's sons and daughters, over the age of sixteen years, employed in his trade or occupation, and a sum representing ten pounds for each child under the age of sixteen residing with, and dependent upon him, are also allowed to be deducted from his income.

(v.) *Dividend Duties Act in Western Australia.* This Act was passed in order to impose a tax on the dividends or profits of incorporated companies, and repealed the Company Duties Act passed in 1899. The Dividend Duties Act was passed on 20th December, 1902, and an amendment was assented to on 14th December, 1906. The principal Act provides that within seven days after the declaration of a dividend by a company carrying on business in Western Australia such company shall pay to the Colonial Treasurer a duty equal to one shilling for every pound of the amount or value of such dividend. A company that carries on in the State any insurance or assurance business exclusively (not being a life assurance company) is required to pay, on or before 1st March in each year, a sum equal to twenty shillings for every £100 of premiums, and a proportionate sum for every fraction of £100 of such premiums. The rates payable by shipping companies are 5 per cent. of 5 per cent. on all inward or outward traffic, including passenger fares, and 5 per cent. of the profits on sales of coal or other goods, or of the profits of vessels trading exclusively within the State.

7. *Tasmania.*—(i.) *Legislation.* The Land Tax and Income Tax Act of 1910 which repealed the Income Tax Act of 1902 and its amendment, governs this form of taxation in Tasmania. The tax is levied according to the following scale:—

(ii.) *Rates.* In the case of income derived from personal exertion the scale is as follows:—Under £125, 4d.; between £125 and £150, 4½d.; between £150 and £250, 4¾d.; between £250 and £350, 5½d.; between £350 and £400, 5¾d.; between £400 and £700, 6d. on first £400 and 7d. on the remainder; between £700 and £900, 6d. on first £400, 7d. on next £200, and 8d. on remainder; between £900 and £1000, 6d. on first £400, 7d. on next £200, 8d. on next £200, and 10d. on remainder; above £1000, 6d. on first £400, 7d. on next £200, 8d. on next £200, 10d. on next £200, 1s. on next £500, 1s. 2d. on next £500, and 1s. 4d. on remainder.

The duty levied by the principal Act is one shilling for every pound sterling of the taxable amount derived from the produce of property, provided that the income is £100 or over per annum. The same scale also applies to the income of any company except those that are specially mentioned below, and to dividends.

(iii.) *Exemptions.* The exemptions from taxation in this State comprise the following :—

- (a) Income of any person, not being a company, under £100 per annum, provided that such income is not received as a prize in any lottery authorised by law in Tasmania.
- (b) Revenues of Municipal Corporations, Road Trusts, Town and Marine Boards, Water Trusts and other local government bodies.
- (c) Incomes of companies, societies, etc., not carrying on business for the purposes of gain to the shareholders, and registered friendly societies.
- (d) Income of the Governor of Tasmania.
- (e) Income derived as rent for the use and occupation of land that is subject to land tax.
- (f) Income of every person arriving in Tasmania for a period of six months after his arrival.

(iv.) *Deductions.* Incomes under £80 are exempt in cases of unmarried persons, or under £100 in cases of married persons, widowers, and widows maintaining at least one child under the age of sixteen years. For incomes between £80 and £400 the following deductions are allowed :—Between £80 and £110, £70 ; between £110 and £125, £60 ; between £125 and £150, £50 ; between £150 and £250, £40 ; between £250 and £350, £30 ; between £350 and £400, £20. Also every tax-payer, the taxable amount of whose income is less than £150, can claim a rebate of two shillings and sixpence for every child under the age of sixteen.

8. Taxation of Commonwealth Salaries and Allowances.—On 8th October, 1907, the Commonwealth Salaries Act, passed by the Federal Parliament, received the Governor-General's assent. By this Act it is declared that salaries and allowances paid by the Commonwealth are liable to taxation by the States. The tax is payable in the State in which the officer resides and the salary is earned, and in the case of a member of the Parliament of the Commonwealth, in the State in which he was elected. The only exemption from taxation is the salary of the Governor-General. This Act was the outcome of considerable litigation, brought about by the refusal of persons in receipt of Federal salaries and allowances to pay income tax in respect thereof.

§ 3. Trust Funds.

1. Nature.—In addition to the moneys received by the several State Governments as revenue, and paid to the credit of their respective Consolidated Revenue Funds, considerable sums are held by the Governments in trust for various purposes. One of the chief sources of these trust funds is the State Savings Bank, which exists in each State, either as a Government department or under the control of a Board acting under Government supervision or Government guarantee. In most of the States also, sinking funds

for the redemption of public debt are provided, and the moneys accruing thereto are paid to the credit of the appropriate trust funds. A similar course is followed in the case of municipal sinking funds placed in the hands of the Government. In all the States except New South Wales, life assurance companies carrying on business are required to deposit a substantial sum in cash or approved securities with the Government, and these deposits go to further swell the trust funds. Various other deposit accounts, superannuation funds, suspense accounts, etc., find a place in these funds. The trust funds have at various times enabled the several State Treasurers to tide over awkward financial positions, but the propriety of allowing deficits to be frequently liquidated in this manner is worthy of very serious consideration.

2. **Extent of Funds.**—The amount of such funds held by the several State Governments on 30th June, 1912, was as follows:—

TRUST FUNDS ON 30th JUNE, 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Amount of trust funds	5,547,741	8,401,665	6,004,049	1,038,663	8,771,061	591,711	30,349,890

§ 4. Loan Funds.

1. **Nature.**—As early in the history of Australia as 1842 it was deemed expedient to supplement the revenue collections by means of borrowed moneys, the earliest of the loans so raised being obtained by New South Wales for the purpose of assisting immigration, at rates of interest varying from 2½d. to 5½d. per £100 per diem, or approximately from 4½ per cent. to 8 per cent. per annum. The principal reason for Australian public borrowing, however, has been the fact that the Governments of the several States have, in addition to ordinary administrative duties, undertaken the performance of many functions which, in other countries, are usually entrusted to local authorities, or left to the initiative of private enterprise. Principal amongst these have been the construction of railways and the control of the railway systems of the several States, while the assumption by the State Governments of responsibilities in connection with improvements to harbours and rivers, and the erection of lighthouses, as well as the construction of works for the purposes of water supply and sewerage, have materially swelled the amounts which it has been considered expedient to obtain by means of loans. The Australian loan expenditure and public debt thus differ very materially from those of most European countries, where such expenditure is very largely incurred for purposes of defence, or absorbed in the prosecution of war. The debt of Australia, on the other hand, consists in the main of moneys raised and expended with the object of assisting the development of the resources of the Commonwealth, and is, to a very large extent, represented by tangible assets such as railways, tramways, waterworks, etc.

2. **Loan Expenditure, 1911-12.**—During the year ended 30th June, 1912, the actual expenditure of the Australian States from loan funds amounted to £16,325,177, New South Wales with a total of £5,491,103 being the principal contributor to this amount, while Queensland, whose expenditure amounted to £3,324,248, ranked second. The chief item of expenditure for the year was that of railways and tramways, which represented a total of £10,232,261, water supply and sewerage works contributing the amount of £1,960,602; the expenditure on harbours, rivers, etc., and roads and bridges totalling £1,000,330, and land purchases for settlement, loans to local bodies, etc., £2,330,302, were the most important of the remaining items. Details for the year for each State are given in the following table:—

STATE LOAN EXPENDITURE, 1911-12.

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways ...	3,448,126	1,703,453	2,854,560	789,143	1,316,800	120,179	10,232,261
Water supply and sewerage ...	1,344,235	259,281	2,465	229,788	124,833	...	1,960,602
Harbours, rivers, etc. ...	413,998	...	...	154,235	221,045	211,052	1,000,330
Roads and bridges ...	142,640	...	40,591	23,989	130,846	24,935	363,001
Public buildings ...	...	48,369	...	...	89,580	...	137,949
Development of mines, etc. ...	...	21,116	...	341,713	...	20,814	...
Advances to settlers ...	...	889,000	...	128,449	441,452	58,577	2,330,302
Land purchases for settlement ...	...	...	396,960	...	...	...	...
Loans to local bodies ...	...	...	23,835	8,176	...	...	...
Rabbit-proof fences ...	210	...	5,837	80,557	19,514	...	300,732
Other public works and purposes	141,894	52,930	...	...	...	...	...
Total ...	5,491,103	2,974,149	3,324,248	1,756,050	2,344,070	435,557	16,325,177

3. **Aggregate Loan Expenditure.**—The total loan expenditure of the Australian States from the initiation of the borrowing system to the 30th June, 1912, has amounted to no less a sum than £275,508,261. The manner in which this sum has been spent in the several States is furnished in the following table:—

AGGREGATE STATE LOAN EXPENDITURE TO 30th JUNE, 1912.

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways ...	62,011,229	43,280,768	30,153,798	14,826,216	13,320,623	4,553,649	168,146,283
Telegraphs & telephones ...	1,761,845	...	996,587	991,773	332,118	142,410	4,224,733
Water supply & sewerage ...	15,853,253	10,637,002	364,627	6,338,280	3,563,986	...	36,757,148
Harbours, rivers, etc. ...	11,788,442	611,059	2,445,805	2,328,536	2,876,750	3839,650	28,580,611
Roads and bridges ...	1,785,813	176,475	923,656	1,464,736	339,689	...	2,389,782
Defence ...	1,457,536	149,323	363,084	291,615	...	128,224	10,787,890
Public buildings ...	4,510,621	1,912,029	1,514,381	1,154,077	722,300	974,482	3,681,620
Immigration ...	569,980	...	2,763,070	...	113,620	235,000	1,504,985
Development of mines, &c. ...	...	281,218	...	564,675	1,223,767	...	...
Advances to settlers ...	...	235,583	...	...	...	138,034	...
Land purchases for settlement ...	489,000	3,813,334	...	1,798,617	1700,941	777,023	13,048,728
Loans to local bodies ...	52,403	...	3,105,765	373,353	...	...	...
Rabbit-proof fences ...	...	...	...	...	...	...	...
Other pub. works & purposes ...	202,749	1,652,922	1,543,400	2,371,081	145,836	470,493	6,386,481
Total ...	100,482,821	62,749,713	44,174,173	32,502,959	24,339,630	11,258,965	275,508,261

* Exclusive of £1,866,168 for "Loans in aid of Revenue."

It must be noted that the figures furnished in this table represent the amounts actually spent, and consequently differ somewhat from those given later in the statements relating to the public debt, which represent amount of loans still unpaid at a given date. The loan expenditure statement includes all such expenditure, whether the loans by means of which the necessary funds were raised have been repaid or are still in existence. On the other hand, in the public debt statement loans repaid are excluded, but in the case of loans still outstanding each is shown according to the amount repayable at maturity, not according to the amount originally available for expenditure.

4. **Relative Importance of Loan Items.**—The relative importance of the different items of loan expenditure given in the foregoing table varies considerably in the several States, but in each instance the expenditure on railways and tramways predominates, the percentage of this item on total expenditure ranging between the limits of 41 per cent. in the case of Tasmania and 70 per cent. in that of Victoria. The following table gives for each State the percentage of each item on the total loan expenditure of that State to 30th June, 1912:—

**PERCENTAGE OF EACH ITEM ON TOTAL LOAN EXPENDITURE OF THE STATES
TO 30th JUNE, 1912.**

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Railways and tramways ...	61.71	68.97	68.26	45.62	54.73	40.44	61.03
Telegraphs and telephones ...	1.75	...	2.26	3.05	1.36	1.26	1.53
Water supply and sewerage ...	15.78	16.95	0.83	19.50	14.64	...	13.34
Harbours, rivers, etc. ...	11.73	0.97	5.54	7.16	11.82	34.10	10.37
Roads and bridges ...	1.78	0.28	2.09	4.51	1.39		
Defence ...	1.45	0.24	0.82	0.90	...	1.14	0.87
Public buildings ...	4.49	3.05	3.43	3.55	2.97	8.66	3.92
Immigration ...	0.57	...	6.25	...	0.47	2.09	1.34
Development of mines, etc. ...	...	0.45	...	...	5.03	...	0.55
Advances to settlers ...	...	0.38	...	1.74	6.99	1.23	4.73
Land purchases for settlement	0.49	6.08	...	5.53		...	
Loans to local bodies ...	...	...	7.03	...		6.90	
Rabbit-proof fences ...	0.05	...	...	1.15		...	
Other public works & purposes	0.20	2.63	3.49	7.29	0.60	4.18	2.32
Total ...	100.00	100.00	100.00	100.00	100.00	100.00	100.00

5. Loan Expenditure in Successive Years.—In the following table are given particulars relative to the loan expenditure of the several States during each of the years 1902-3 to 1911-12 :—

STATE LOAN EXPENDITURE, 1902-3 to 1911-12.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1902-3 ...	4,713,386	756,404	1,022,405	465,554	1,665,901	238,631	8,862,281
1903-4 ...	2,288,742	447,244	603,805	415,728	710,629	167,123	4,633,271
1904-5 ...	1,571,257	373,191	225,466	449,214	654,353	150,994	3,424,475
1905-6 ...	1,367,022	932,966	297,624	449,930	372,442	136,971	3,556,955
1906-7 ...	1,058,553	595,658	683,570	499,132	900,964	156,945	3,894,822
1907-8 ...	1,965,329	783,538	1,033,676	495,928	733,745	224,954	5,237,170
1908-9 ...	2,906,507	1,098,360	1,247,821	832,114	1,012,452	334,200	7,431,454
1909-10 ...	3,246,640	1,209,505	1,486,216	978,082	1,028,995	435,104	8,384,542
1910-11 ...	3,921,758	2,657,271	1,995,301	1,567,210	1,484,367	300,216	11,926,123
1911-12 ...	5,491,103	2,974,149	3,324,248	1,756,050	2,844,070	435,557	16,325,177

Throughout the ten years under review the loan expenditure of New South Wales exceeded that of any other of the States, and for the year 1902-3 represented more than half of the aggregate loan expenditure of Australia. The large loan expenditure of New South Wales in 1902-3, 1908-9, 1909-10 and 1910-11 was incurred chiefly in connection with railway construction and the resumption of the foreshores and adjoining properties of Darling Harbour. In Victoria the large expenditure of 1905-6 resulted in large measure from the purchase of lands for closer settlement, while the construction of railways, and water supply and sewerage works was mainly responsible for the high expenditure of 1908-9 and 1909-10. In 1910-11 the large amount

was mainly accounted for by heavy expenditure on railways and land purchased for settlement. In the case of the large loan expenditure of Queensland in 1902-3, as well as that of 1906-7, 1908-9, 1909-10 and 1910-11, railway construction was the principal contributing item. In Western Australia the heavy loan expenditure of 1902-3 and 1908-9 was principally in connection with railway construction and water supply.

6. Loan Expenditure per Head.—The loan expenditure per head of population varies materially in the different States and in different years, reaching its highest point for the ten years under review in Western Australia in 1911-12 with £7 19s. 4d. per head, and its lowest in Victoria in 1904-5 with 6s. 2d. per head. Particulars concerning the loan expenditure per head for the ten years 1902-3 to 1911-12 are given hereunder:—

LOAN EXPENDITURE PER HEAD, 1902-3 to 1911-12.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1902-3	3 7 3	0 12 6	1 19 11	1 5 9	7 17 2	1 6 7	2 5 9
1903-4	1 12 1	0 7 4	1 3 4	1 3 0	3 3 3	0 18 3	1 3 8
1904-5	1 1 7	0 6 2	0 8 7	1 4 8	2 14 8	0 16 3	0 17 3
1905-6	0 18 4	0 15 5	0 11 2	1 4 6	1 9 9	0 14 8	0 17 8
1906-7	0 13 10	0 9 9	1 5 4	1 7 0	3 10 7	0 16 11	0 19 0
1907-8	1 5 2	0 12 9	1 17 11	1 6 3	2 17 8	1 3 9	1 5 2
1908-9	1 16 8	0 17 7	2 4 10	2 2 9	3 18 0	1 14 10	1 15 1
1909-10	2 0 3	0 18 11	2 11 5	2 9 4	3 17 6	2 5 1	1 18 9
1910-11	2 7 9	2 0 10	3 6 7	3 16 5	5 7 3	1 11 0	2 13 11
1911-12	3 5 7	2 3 8	5 6 10	4 4 0	7 19 4	2 5 0	3 11 6

§ 5. Public Debt.

1. The Initiation of Public Borrowing.—The earliest of the loans raised in Australia for Government purposes was that obtained by New South Wales in 1842. This and nine other loans raised prior to 1855 were all procured locally. In the last-mentioned year Australia's first appearance on the London market occurred, the occasion being the placing of the first instalment of the New South Wales 5 per cent. loan for £683,300. Victoria first appeared as a borrower in 1854, and made its first appearance on the London market in 1859. In the remaining States the first public loans were raised in the following years:—Queensland 1861, South Australia 1854, Western Australia 1845, and Tasmania 1867.

2. Nature of Securities.—All the earlier loans raised by the Australian States were obtained by the issue of debentures, some of which were repayable at fixed dates, and others by annual or other periodical drawings. In more recent years, however, the issue of debentures has given place to a great extent to that of inscribed stock, the inscription in the case of local issues being carried out by the State Treasuries, and in the cases of loans floated in London being mainly performed by the Bank of England and the London and Westminster Bank. The issue of debentures has not, however, been entirely discontinued, for within the last seven years debentures to the amount of upwards of £2,000,000 were placed on the market by the Government of New South Wales. In other States also, recent issues of debentures have taken place, the occasions usually being those in which the term of the loan is less than that ordinarily attaching to issues of

inscribed stock. Another form of security is that variously known as the Treasury bill or Treasury bond. This is usually merely a short term debenture having a currency in most instances of from three to five years. The bonds are issued in certain cases to liquidate deficiencies in revenue, and in others to obtain moneys for the purpose of carrying on public works at a time when it is deemed inexpedient to place a permanent loan on the market. The amount of the public debt of the several States held in each of these forms of security is furnished in the table hereunder:—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1912.

State.	Debentures.	Inscribed Stock.	Treasury Bills.		Total Amount Outstanding.
			For Public Works and Services.	In aid of Revenue.	
	£	£	£	£	£
New South Wales ...	2,166,450	95,771,669	2,000,000	114,516	100,052,635
Victoria ...	11,394,167	42,434,189	6,733,860	25,000	*60,737,216
Queensland ...	14,728,389	31,214,147	...	1,125,650	47,068,186
South Australia†	1,184,700	27,092,962	3,402,462	...	31,680,124
Western Australia ...	388,700	24,921,753	973,070	...	26,283,523
Tasmania ...	1,714,250	8,735,551	852,610	...	11,302,411
Total ...	31,576,656	230,170,271	13,962,002	1,265,166	*277,124,095

* Includes an advance of £150,000 from South Australian Government to Victorian Government.

† Includes debt on Port Augusta-Oodnadatta railway, £2,240,011.

The manner in which the amount of public debt of the Australian States held under these various forms of security has grown during the past nine years will be seen from the following table:—

PUBLIC DEBT OF AUSTRALIAN STATES, 1902-3 to 1912.

Date.	Debentures.	Inscribed Stock.	Treasury Bills.		Total Amount Outstanding.
			For Public Works and Services.	In aid of Revenue.	
	£	£	£	£	£
30th June, 1903 ...	43,639,525	168,388,889	6,046,775	4,796,576	222,871,765
" 1904 ...	37,741,025	172,796,361	12,493,650	4,716,576	227,747,612
" 1905 ...	39,158,744	175,047,336	12,045,100	4,487,491	230,738,671
" 1906 ...	39,587,224	181,279,045	12,194,464	5,367,087	238,427,820
" 1907 ...	38,061,799	184,157,771	13,571,985	4,358,172	240,149,727
" 1908 ...	37,665,279	190,377,823	12,131,871	3,660,516	243,835,489
" 1909 ...	31,218,229	203,640,152	13,620,561	3,294,591	251,773,533
" 1910 ...	29,765,929	213,599,894	12,393,503	1,864,337	257,623,663
" 1911 ...	31,148,162	222,343,184	8,939,771	3,946,166	267,127,283*
" 1912 ...	31,576,656	230,170,271	13,962,002	1,265,166	277,124,095†

* Includes an advance of £750,000 from South Australian Government to Victorian Government.

† Includes £150,000, balance of £750,000 referred to in Note.*

During the nine years between 30th June, 1903, and 30th June, 1912, the public debt of the States increased by £54,252,330, or at the rate of about £6,000,000 per annum. The amount of debentures comprised in the total debt diminished by £12,062,869 during the period, while the amount held as inscribed stock increased by £61,781,382, and as Treasury bills by £4,383,817.

3. Increase in Indebtedness of the Several States.—The table given hereunder furnishes particulars of the increase which has taken place during the past nine years in the public debts of the several States:—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1903 to 1912.

Date.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
30th June, 1903 ...	77,692,987	51,447,900	41,031,247	27,843,370	15,627,298	*9,228,963	222,871,765
" 1904 ...	80,033,581	51,819,962	41,773,297	28,593,645	16,090,288	9,436,839	227,747,612
" 1905 ...	82,321,938	51,763,767	41,764,467	28,773,695	16,642,773	9,471,971	230,738,671
" 1906 ...	85,641,734	53,079,800	41,764,467	30,062,635	18,058,553	9,800,631	238,427,820
" 1907 ...	85,607,832	53,104,989	41,764,467	30,526,718	19,222,638	9,923,083	240,149,727
" 1908 ...	87,635,826	53,305,487	42,264,467	29,985,858	20,493,618	10,150,233	243,835,489
" 1909 ...	90,307,419	54,667,197	44,276,067	30,436,183	21,951,753	10,134,914	251,773,533
" 1910 ...	92,525,095	55,576,725	44,276,067	31,387,870	23,287,453	10,570,453	257,623,663
" 1911 ...	95,523,926	57,983,764	44,613,197	34,224,653	23,703,953	11,077,790	267,127,283
" 1912 ...	100,052,635	60,737,216	47,068,186	31,680,124	26,283,523	11,302,411	277,124,095

* On 31st December, 1902.

The States in which the greatest increase in indebtedness was experienced during the period are New South Wales and Western Australia, the former advancing by £22,359,648, the latter by £10,656,225. On the other hand the public debt of Tasmania increased by only about £2,000,000.

4. **Indebtedness per Head.**—The indebtedness per head of population varies considerably in the several States, being highest in the case of South Australia, and lowest in that of Victoria. Details for the period from 30th June, 1903, to 30th June, 1912, are as follows:—

PUBLIC DEBT OF AUSTRALIAN STATES PER HEAD, 30th JUNE, 1903 to 1912.

Date.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
30th June, 1903 ...	54 19 1	42 13 8	79 15 0	78 6 8	71 3 0	*51 3 3	57 4 11
" 1904 ...	55 11 7	43 1 8	80 1 1	80 2 0	68 15 6	51 11 4	57 14 3
" 1905 ...	55 19 4	42 18 5	78 19 2	79 18 10	67 9 4	51 8 8	57 13 9
" 1906 ...	56 18 3	43 14 8	77 17 9	82 16 11	70 19 11	53 3 8	58 14 5
" 1907 ...	55 9 2	43 6 8	76 19 0	83 0 4	75 4 8	53 14 0	58 4 9
" 1908 ...	55 14 0	42 19 5	76 6 10	79 6 7	79 9 9	54 2 9	58 2 8
" 1909 ...	56 10 3	43 6 11	77 13 8	78 7 1	83 7 7	53 5 7	58 18 0
" 1910 ...	56 13 2	43 6 8	74 16 10	78 18 6	85 18 6	55 6 10	58 19 0
" 1911 ...	57 9 4	43 18 3	72 12 4	83 4 6	82 13 0	58 4 2	59 9 9
" 1912 ...	57 11 9	44 16 11	74 5 0	75 5 8	86 18 8	59 9 7	59 13 5

* On 31st December, 1902.

5. **Flotation of Loans.**—The early loans of the Australian States, usually for comparatively small amounts, were raised locally, but, with the increasing demand for loan funds and the more favourable terms offering in the London than in the local money market, the practice of placing Australian public loans in London came into vogue, and for many years local flotations, except for short terms or small amounts, were comparatively infrequent. In more recent years, however, the accumulating stocks of money in Australia seeking investment have led to the placing of various redemption and other loans locally, with very satisfactory results. In the following table are given particulars of loans of the several States outstanding on 30th June, 1912, which had been floated in London and Australia respectively:—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1912.

State.	Floated in London		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
New South Wales	67,525,305	67.49	32,527,330	32.51	100,052,635
Victoria...	37,392,128	61.56	23,345,088	38.44	60,737,216
Queensland ...	39,409,347	83.73	7,658,839	16.17	47,068,186
South Australia ...	18,749,288	59.18	12,930,836	40.82	31,680,124*
Western Australia	21,107,453	80.31	5,176,070	19.69	26,283,523
Tasmania ...	8,007,250	70.85	3,295,161	29.15	11,302,411
Total ...	192,190,771	69.35	84,933,324	30.65	277,124,095

* Including Port Augusta-Oodnadatta railway debt.

The following table, giving corresponding particulars for the aggregate indebtedness of the Australian States at the end of each of the financial years 1902-3 to 1911-12, furnishes an indication of the rapidity with which the local holdings of Australian securities have grown in recent years:—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1903 to 1912.

Date.	Floated in London.		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
30th June, 1903 ...	186,507,721	83.68	36,364,044	16.32	222,871,765
" 1904 ...	188,165,495	82.62	39,582,117	17.38	227,747,612
" 1905 ...	188,918,820	81.88	41,819,851	18.12	230,738,671
" 1906 ...	190,887,001	80.06	47,540,819	19.94	238,427,820
" 1907 ...	185,579,389	77.28	54,570,338	22.72	240,149,727
" 1908 ...	183,321,256	75.18	60,514,233	24.82	243,835,489
" 1909 ...	189,410,036	75.23	62,363,497	24.77	251,773,533
" 1910 ...	191,972,479	74.52	65,651,184	25.48	257,623,663
" 1911 ...	189,067,671	70.78	78,059,612	29.22	267,127,283
" 1912 ...	192,190,771	69.35	84,933,324	30.65	277,124,095

It will be seen that in the course of nine years the London indebtedness of the States has increased by £5,683,050, while the local indebtedness has increased by no less than £48,569,280. In other words, whilst on 30th June, 1903, the Australian portion of the debt represented only about 16 per cent. of the total, the proportion had on 30th June, 1912, grown to 31 per cent.

6. Rates of Interest.—As mentioned above, the highest rate of interest paid in connection with the earliest Australian public loans was fivepence farthing per £100 per diem or, approximately, 8 per cent. per annum. At the present time the three principal rates of interest payable on Australian public securities are 4 per cent., $3\frac{1}{2}$ per cent., and 3 per cent., most of the loans raised during recent years bearing interest at the rate of $3\frac{1}{2}$ per cent. The average rate payable on the aggregate indebtedness of the Australian States is about $3\frac{1}{4}$ per cent. For the separate States the average rate payable varies considerably, being lowest in the case of Western Australia and highest in that of Queensland; the difference between these two average rates is $\frac{1}{4}$ per cent. In the table given hereunder particulars are furnished of the rates of interest payable on the public debt of the several States of the Commonwealth on 30th June, 1911:—

RATES OF INTEREST PAYABLE ON PUBLIC DEBT OF STATES, 30th JUNE, 1912.

Rate of Interest.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
%	£	£	£	£	£	£	£
6 ...	...	...	...	156,200	...	...	156,200
5 ...	2,700	...	...	140,000	...	...	142,700
$4\frac{1}{2}$ ...	...	...	...	...	46,400	...	46,400
4 ...	16,315,297	15,325,525	21,984,300	9,047,368	4,338,908	3,193,594	70,204,992
$3\frac{1}{2}$...	13,514,093	220,000	524,750	8,716,383	1,912,070	1,364,185	26,251,486
$3\frac{1}{4}$...	53,093,192	34,901,241	19,068,853	7,685,044	12,636,145	6,246,846	133,631,321
$3\frac{1}{2}$ ...	...	25,000	...	...	24,718	...	49,718
3 ...	17,124,698	10,264,450	5,489,383	5,935,129	7,350,000	473,068	46,636,728
Not bearing interest	2,650	1,000	900	...	...	...	4,550
Total public debt ...	100,052,635	60,737,216	47,068,186	31,680,124	26,283,523	11,302,411	277,124,095
Average rate per cent. payable	£ s. d. 3 10 7	£ s. d. 3 10 10	£ s. d. 3 13 6	£ s. d. 3 12 9	£ s. d. 3 9 3	£ s. d. 3 13 0	£ s. d. 3 11 4

* Including Port Augusta-Oodnadatta Railway debt. £2,240,011

The rapid increase which has taken place in recent years in the amount of Australian Government securities, bearing interest at $3\frac{1}{2}$ per cent., is clearly shewn in the table hereunder, which gives particulars concerning the aggregate amount of the Australian indebtedness, at the several rates of interest, on 30th June in each of the years 1908 to 1912 :—

**RATES OF INTEREST PAYABLE ON PUBLIC DEBT OF STATES, 30th JUNE,
1908 to 1912.**

Rate of Interest.	30th June, 1908.	30th June, 1909.	30th June, 1910.	30th June, 1911.	30th June, 1912.
%	£	£	£	£	£
6	297,900	269,800	209,500	191,200	156,200
5	242,700	242,700	242,700	192,700	142,700
$4\frac{1}{2}$	58,700	55,900	52,800	49,700	46,400
4	87,392,377	80,403,472	76,983,242	71,433,697	70,204,992
$3\frac{1}{2}$	3,131,760	5,218,435	10,896,757	21,587,696	26,251,486
$3\frac{3}{4}$	104,601,533	117,970,370	121,987,932	126,678,118	133,631,321
$3\frac{1}{4}$	149,718	124,718	75,000	74,718	49,718
3	47,948,051	47,472,888	47,161,895	46,909,879	46,636,728
Not bearing interest	12,750	15,250	13,837	9,575	4,550
Total public debt	243,835,489	251,773,533	257,623,663	267,127,283	277,124,095
Average rate % payable	£3 11 9	£3 11 6	£3 11 5	£3 11 4	£3 11 4

During the four years between 30th June, 1908, and 30th June, 1912, the Australian State Government 4 per cent. securities decreased by £17,187,385, and the 3 per cent. securities by £1,311,323, while the $3\frac{1}{2}$ per cents. advanced by £29,029,788, and the $3\frac{3}{4}$ per cents. by £23,119,726. During the same period the total amount at all other rates than the four here mentioned declined by about 47 per cent. from £761,768 to £399,568.

7. Interest Payable per Head.—The relative burden of the debts of the several States in respect of interest payments will be seen from the following table, which gives for the 30th June, 1912, the amount of interest payable annually on the debt of each State as outstanding at that date, and also the corresponding amount per head of population :—

ANNUAL INTEREST PAYABLE ON PUBLIC DEBT OUTSTANDING AT 30th JUNE, 1912.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Total annual interest payable	3,430,066	2,048,011	1,724,304	1,008,686	856,285	411,621	9,479,003
Annual interest payable per head	£2 1 0	£1 10 1	£2 15 6	£2 8 3	£2 18 3	£2 2 6	£2 1 6

8. Dates of Maturity.—An important point in which the securities of the Australian Governments, whether in the form of inscribed stock, debentures, or Treasury bills, differ from such a well-known form of security as British consols, consists in the fact that whereas the latter are interminable, the Australian Government securities have in almost all cases a fixed date for repayment, the exceptions being the State of New South Wales, which includes in its public debt an amount representing interminable securities totalling on 30th June, 1912, £532,890; the State of Victoria, which includes £4,629,488 and £278,730 due in 1931, payable at the option of the Government at any time after 29th September, 1917; and the State of South Australia, which includes £5,095,629, similarly repayable after 1st January, 1916. The terms of the loans raised by the issue of debentures and inscribed stock have varied considerably in the different States, ranging between fifteen and fifty years, while loans obtained by means of Treasury bills have usually been for such short terms as from six months to five years. In the case of the majority of the loans the arrival of the date of maturity means that arrangements for renewal are necessary in respect of the greater portion of the loan, as it is only in exceptional cases that due provision for redemption has been made. The condition of

the money market at the date of maturity has an important bearing on the success or otherwise with which the renewal arrangements can be effected, and consequently, in order to obviate the necessity for making an application to the market at an unfavourable time, several of the States have now adopted the practice of specifying a period of from ten to twenty years prior to the date of maturity within which the Government, on giving twelve, or in some cases six, months' notice, has the option of redeeming the loan. By such means advantage may be taken by the Government during the period of opportunities that may offer for favourable renewals. Particulars concerning the due dates of the loans of the several States outstanding on 30th June, 1912, are given in the following table:—

**DUE DATES OF THE PUBLIC DEBTS OF THE SEVERAL STATES OF THE
COMMONWEALTH OUTSTANDING ON 30th JUNE, 1912.**

Due Dates.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	£	£	£	£	£	£	£
Overdue ...	2,650	1,000	900				4,550
1912 ...	30,000	12,500		145,880	323,070	136,102	647,552
1913 ...	4,549,350	4,050,000	2,066,500	1,038,025	650,000	1,209,494	13,563,309
1914 ...		25,000		860,300		1,314,230	2,199,530
1915 ...	3,881,081	525,000	11,728,800	311,975	85,840	181,624	16,714,320
1916 ...		2,792,000		2,488,298		269,711	5,550,009
1917 ...	388,357	3,039,860		2,015,840	250,000	201,256	5,895,313
1918 ...	12,826,200	25,000		1,973,979		58,488	14,883,667
1919 ...	11,083,945	4,155,650		421,447		2,400	15,663,442
1920 ...		6,012,500		449,626		302,094	6,764,220
1921 ...	4,872,843	2,588,200		1,035,325		853,496	9,349,864
1922 ...		1,007,275	524,750	792,438		17,326	2,341,789
1923 ...	3,018,975	7,746,795		280,725	605,325		11,651,820
1924 ...	16,698,065		12,973,834	1,345,785	664,530		31,682,214
1925 ...	222,255			11,440		5,050	238,745
1926 ...		5,103,000		1,026,565	1,922,305	67,600	8,119,470
1927 ...		202,000		644,145	2,500,000		3,346,145
1928 ...		897,500		664,840			1,562,340
1929 ...		377,500		203,000		300,000	880,500
1930 ...		1,754,850	3,704,800	300,250		100	5,760,000
1931 ...		1,061,648		450			1,062,098
1932 ...		832,195			1,325,000		2,157,195
1933 ...	9,686,300			250,800			9,937,100
1934 ...				1,044,100	997,853		2,041,953
1935 ...	12,500,000			1,521,550	8,280,000		22,301,550
1936 ...		300,000		5,057,630	1,100,000		6,457,630
1937 ...				16,400			16,400
1938 ...				101,240			101,240
1939 ...				2,576,442			2,576,442
1940 ...		248,900		6,000		5,606,500	5,861,400
1941 ...		324,380					324,380
1942 ...		485,100					485,100
1943 ...		3,600					3,600
1944 ...		400					400
1945 ...			6,375,900				6,375,900
1946 ...		217,400					217,400
1947 ...			4,498,693		2,000,000		6,498,693
1949 ...		11,765,871					11,765,871
1950 ...	12,250,000		946,600				13,196,600
1951 ...			999,600				999,600
1953 ...			1,247,809				1,247,809
1954 ...		123,874					123,874
1955 ...					4,437,000		4,437,000
1960 ...					1,000,000		1,000,000
1970 ...			2,000,000				2,000,000
Interminable	532,890			5,095,629			5,628,519
Annual drawings	114,516				142,600		257,116
Indefinite...	7,395,208	4,908,218 150,000				777,000	13,280,426
Total ...	100,052,635	60,737,216	47,068,186	31,680,124	26,283,523	11,302,411	277,124,095

In the above table those loans in the case of which the Government has the option of redemption during a specified period, have been in each instance classified according to the latest date of maturity. It may be added that the above table does not include a loan of £1,000,000 for one year, advanced by the Commonwealth to the State of Queensland and repayable on 5th March, 1913. During the fifteen years from 1912 to 1926 inclusive, the amount falling due represents a total of no less than £145,269,814 or about 52 per cent. of the total outstanding at 30th June, 1912.

9. Sinking Funds.—The practice of providing for the ultimate extinction of the public debt by means of the creation of sinking funds, receiving definite annual contributions from Consolidated Revenue, and accumulating at compound interest, has only been consistently adopted in the case of Western Australia. This State has established, in connection with each of its loans, sinking funds varying from 1 per cent. to 3 per cent. per annum of the nominal amount of the loan. These funds are placed in the hands of trustees in London, by whom they are invested in the securities of the British, Indian, and Colonial Governments, and applied from time to time in the redemption of loans falling due. In the remaining States the sinking fund provision made is varied, consisting in certain instances of the revenues from specified sources, in others of the Consolidated Revenue Fund surplus, and in others again of fixed annual amounts. In the following table are given particulars of the sinking funds of each State, and the net indebtedness of each after allowance for sinking fund has been made, the details given being those for 30th June, 1912 :—

STATES SINKING FUNDS AND NET INDEBTEDNESS, 30th JUNE, 1912.

State.	Gross Indebtedness.	Sinking Fund.	Net Indebtedness.	Net Indebtedness per head.
	£	£	£	£ s. d.
New South Wales ...	100,052,635	653,981	99,398,654	57 4 3
Victoria ...	60,737,216	1,131,531	59,605,685	44 0 2
Queensland ...	47,068,186	15,000	47,053,186	74 4 6
South Australia ...	*31,680,124	561,550	31,118,574	73 19 0
Western Australia ...	26,283,523	2,918,733	23,364,790	77 5 7
Tasmania ...	11,302,411	420,972	10,881,439	57 5 4
Total ...	277,124,095	5,701,767	271,422,328	58 10 3

* Including Port Augusta-Oodnadatta Railway debt, £2,240,011.

10. London Prices of Australian Stocks.—In examining the prices quoted for Australian State Government securities, particularly if the examination is made with the object of comparing the prices at a given time of different stocks, or the prices at different times of the same stock, several points in connection with the securities need to be kept in view; the principal of these are—(a) the rate of interest payable, (b) the date of maturity, and (c) the date at which interest is payable.

In the following table particulars are given of the London prices of some of the principal $3\frac{1}{2}$ per cent. stocks of the several States during 1912. The quotations given are the middle prices, taken from the *Economist*, and are for the last Friday in each quarter :—

LONDON QUOTATIONS FOR AUSTRALIAN $3\frac{1}{2}$ PER CENT. STOCKS DURING 1912.

State.	Rate of Interest Payable.	Year of Maturity.	Months in which Interest is Payable.	London Prices (cum dividend) on—			
				30th Mar. 1912.	29th June 1912.	30th Sept. 1912.	28th Dec. 1912.
New South Wales	$3\frac{1}{2}$	1918	Mar.—Sept.	98 $\frac{1}{2}$	98 $\frac{1}{2}$	97	98
Victoria ...	$3\frac{1}{2}$	1923	Jan.—July	96 $\frac{1}{2}$	95 $\frac{1}{2}$	95 $\frac{1}{2}$	94
Queensland ...	$3\frac{1}{2}$	1924-30	Jan.—July	96 $\frac{1}{2}$	95	95	93
South Australia ...	$3\frac{1}{2}$	1939	Jan.—July	97	95 $\frac{1}{2}$	94 $\frac{1}{2}$	93
West. Australia ...	$3\frac{1}{2}$	1915-35	May—Nov.	95 $\frac{1}{2}$	94 $\frac{1}{2}$	94 $\frac{1}{2}$	91
Tasmania ...	$3\frac{1}{2}$	1920-40	Jan.—July	96	93 $\frac{1}{2}$	93	91

Throughout the year the prices of Australian $3\frac{1}{2}$ per cent. stocks on the London market were, on the average, slightly less than those for the corresponding periods of the preceding year.

SECTION XXI.

PRIVATE FINANCE.

§ 1. Currency.

1. **The Three Australian Mints.**—Soon after the discovery of gold in Australia steps were taken for the establishment of a branch of the Royal Mint in Sydney. The formal opening took place on the 14th May, 1855, the mint being located in the southern part of the building once known as the "rum hospital," where it has remained up to the present. It is now proposed, however, to erect more suitable buildings for its accommodation in some other part of the city. The Melbourne branch of the Royal Mint was opened on the 12th June, 1872, and the Perth branch on the 20th June, 1899. The States of New South Wales, Victoria, and Western Australia provide an annual endowment, in return for which the mint receipts are paid into the respective State Treasuries, and it may be said that, apart from expenditure on buildings, new machinery, etc., the amounts paid into the Treasuries fairly balance the mint annuities.

2. **Receipts and Issues in 1911.**—(i.) *Assay of Deposits Received.* The number of deposits received during 1911 at the Sydney Mint was 1471, of a gross weight of 741,882 ozs.; at the Melbourne Mint, 3403, of a gross weight of 758,693 ozs.; and at the Perth Mint, 5003, of a gross weight of 1,494,180 ozs. The average composition of these deposits in Sydney was, gold 883.8, silver 80.1, base 36.1 in every 1000 parts; Melbourne, gold 919.6, silver 41.4, base 39.0 in every 1000 parts; and Perth, gold 808.8, silver 125.0, base 66.2 in every 1000 parts. As many parcels have, however, undergone some sort of refining process before being received at the mint, the average assay for gold shews higher in these figures than for gold as it naturally occurs.

(ii.) *Receipts.* Practically all the gold coined at the Australian mints is the produce of either the Commonwealth or of the Dominion of New Zealand. The following table shews the origin of the gold received at the three mints during 1911:—

ORIGIN OF GOLD RECEIVED AT MINTS DURING 1912.

Origin of Gold.	Sydney Mint.	Melbourne Mint.	Perth Mint.
	OZS.	OZS.	OZS.
New South Wales	125,498.96	4,934.02	...
Victoria	245.03	551,996.61	...
Queensland... ..	371,127.31	4,999.28	...
South Australia ... ..	...	11,378.23	...
Western Australia	147.49	11,864.75	1,498,728
Tasmania	1,227.16	26,101.24	...
Northern Territory	3,285.41	...	76
New Zealand	237,031.58	133,209.94	...
Other countries, origin not stated, and light gold coin	3,319.43	14,208.84	376
Total	741,882.37	758,692.91	1,494,180

It will be seen that practically all gold produced in New South Wales and Queensland, and about five-eighths of that produced in New Zealand, found its way to the Sydney Mint, while the Melbourne Mint received all Victorian and South Australian gold, together with nearly all of the Tasmanian and about three-eighths of the New Zealand production, and the Perth Mint coined practically all Western Australian gold with the exception of a small portion sent to Sydney and Melbourne.

(iii.) *Issues.* The Australian mints, besides issuing gold coin in the shape of sovereigns and half-sovereigns, also issue gold bullion, partly for the use of local manufacturers (jewellers and dentists), and partly for export, India taking annually a considerable quantity of gold cast into 10-oz. bars. The issues during 1911 are shewn in the table below:—

ISSUES OF GOLD FROM MINTS DURING 1912.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£	£	£
Sydney ...	2,519,000	126,000	2,645,000	83,311	2,728,311
Melbourne ...	2,851,451	...	2,851,451	113,429	2,964,880
Perth ...	4,373,165	65,186	4,438,351	693,030	5,131,381
Total ...	9,743,616	191,186	9,934,802	889,770	10,824,572

In addition to the issue of gold the Mints are also charged with the issue of silver and bronze coin struck in London. There was, however, no issue of silver coin in 1911. The value of bronze coin issued was £1200, viz., £600 in pence, and £600 in half-pence.

(iv.) *Withdrawals of Worn Coin.* The mints receive light and worn coin for recoinage, gold being coined locally, while silver is forwarded to London. The value of gold coin so received in 1911 amounted to £28,100, viz.—Sydney, £11,467; Melbourne, £16,558; and Perth, £75. The value of worn silver coins received during 1911 was £45,310, viz.—Sydney, £22,958; Melbourne, £13,411; and Perth, £8941. This last amount includes £400 shillings and £800 sixpences exchanged for Australian coin.

3. **Total Receipts and Issues.** (i.) *Receipts.* The total quantities of gold received at the three mints since their establishment are stated in the gross as follows:—Sydney, 35,090,950 ozs.; Melbourne, 34,362,440 ozs.; and Perth, 16,271,579 ozs. As the mints pay for standard gold (22 carats) at the rate of £3 17s. 10½d. per oz., which corresponds to a value of £4 4s. 11½d. per oz. fine (24 carats), it is possible to arrive at the number of fine ounces received from the amounts paid for the gold received. These amounts were:—Sydney, £129,413,156; Melbourne, £135,322,068; Perth, £57,390,345; corresponding to—Sydney, 30,466,446 ozs. fine; Melbourne, 31,857,522 ozs. fine; and Perth, 13,510,836 ozs. fine. Silver found in assaying is paid for if it exceeds 8 per cent.; in Sydney it has been paid for at the rate of one shilling and sixpence per oz. fine since 12th May, 1902; in Melbourne the price is fixed monthly by the Deputy-master of the Mint; and in the Perth accounts it has been taken at one shilling per oz.

(ii.) *Issues.* The total values of gold coin and bullion issued by the three mints were as shewn in the table on page 842. It may be said that about one-half of the total gold production of Australasia has passed through the three Australian mints, the production of the Commonwealth States to the end of 1911 being valued at £536,196,981, and that of New Zealand at £78,109,897, or a total of £614,306,878.

TOTAL ISSUES OF GOLD FROM MINTS TO END OF 1911.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£	£	£
Sydney ...	119,130,500	3,811,000	122,941,500	6,443,536	129,385,036
Melbourne ...	124,163,083	883,948	125,047,031	10,276,855	135,323,886
Perth ...	52,079,022	189,235	52,268,257	5,108,984	57,377,241
Total ...	295,372,605	4,884,183	300,256,788	21,829,375	322,086,163

The total issues of silver coins to the end of 1911 were £2,415,200, viz.:—Crowns, £3500; double florins, £4585; half-crowns, £722,600; florins, £528,215; shillings, £606,200; sixpences, £253,220; and threepences, £296,880.

Bronze coins to the value of £180,150 were issued, viz.:—Pence, £126,640; halfpence, £53,310; and farthings, £200.

(iii.) *Withdrawals of Worn Coin.* Complete figures as to the withdrawal of gold coin can be given for the Sydney Mint, where they amounted to £1,070,166; at the Melbourne Mint the coins withdrawn since 1890 were worth £497,712. In the case of Perth the withdrawal of worn gold coin since the opening of the Mint amounted to £419.

Withdrawals of worn silver coin amounted to £303,534 in Sydney, to £362,124 in Melbourne, and to £8,650 in Perth.

4. **Standard Weight and Fineness of Coinage.**—The coinage of the Commonwealth is the same as that of the United Kingdom, and the same provisions as to legal tender hold good, viz., while gold coins are legal tender to any amount, silver coins are only so for an amount not exceeding forty shillings, and bronze coins up to one shilling. As will be seen from the table below, the standard weights of the sovereign and half-sovereign are respectively 123.27447 grains and 61.63723 grains, but these coins will pass current if they do not fall below 122.5 grains and 61.125 grains respectively.

STANDARD WEIGHT AND FINENESS OF COMMONWEALTH COINAGE.

Denomination.	Standard Weight.	Standard Fineness.
GOLD—		
	Grains.	
Sovereign ...	123.27447	} Eleven-twelfths fine gold, viz.:— Gold ... 0.91667 } 1.00000 Alloy ... 0.08333 }
Half-sovereign ...	61.63723	
SILVER—		
Crown ...	436.36363	} Thirty-seven-fortieths fine silver, viz.:— Silver ... 0.925 } 1.000 Alloy ... 0.075 }
Double florin ...	349.09090	
Half-crown ...	218.18181	
Florin ...	174.54545	
Shilling ...	87.27272	
Sixpence ...	43.63636	
Threepence ...	21.81818	
BRONZE—		
Penny ...	145.83333	} Mixed metal, viz.:— Copper ... 0.95 } 1.00 Tin ... 0.04 } Zinc ... 0.01 }
Half-penny ...	87.50000	
Farthing ...	43.75000	

5. **Prices of Silver and Australian Coinage.**—(i.) *Prices of Silver.* The value of silver has greatly decreased since its demonetisation and restricted coinage in almost the whole of Europe. Its average price in the London market is shewn in the subjoined table:—

AVERAGE PRICE OF SILVER IN LONDON MARKET, 1873 to 1911.

Year.	Price per Standard Oz.	Year.	Price per Standard Oz.	Year.	Price per Standard Oz.
	d.		d.		d.
1873	59.2500	1886	45.3750	1899	27.5000
1874	58.3125	1887	44.6250	1900	28.3125
1875	56.8125	1888	42.8750	1901	27.2500
1876	53.0000	1889	42.6875	1902	24.1250
1877	54.7500	1890	47.7500	1903	24.7500
1878	52.5625	1891	45.0625	1904	26.3750
1879	51.1875	1892	39.8125	1905	27.8125
1880	52.2500	1893	35.6250	1906	30.8750
1881	51.7500	1894	29.0000	1907	30.1875
1882	51.8125	1895	29.8750	1908	24.3750
1883	50.5625	1896	30.7500	1909	23.6875
1884	50.6875	1897	27.5625	1910	24.6875
1885	48.6250	1898	26.9375	1911	24.5625

The monthly fluctuations during the year 1911 were as follows:—

AVERAGE PRICE OF SILVER IN LONDON MARKET, 1911.

Month.	Price per Standard Oz.	Month.	Price per Standard Oz.	Month.	Price per Standard Oz.
	d.		d.		d.
January	24.8750	May	24.5625	September	24.1875
February	24.0625	June	24.5000	October	24.5625
March	24.3125	July	24.3125	November	25.6250
April	24.5625	August	24.0625	December	25.3750

(ii.) *Profits on Coinage of Silver.* As sixty-six shillings are coined out of one pound troy of standard silver, the silver required to produce £3 6s. of coin was only worth £1 4s. 7d. during 1911; the difference of £2 1s. 5d. represents, therefore, the gross profit or seigniorage made on the coinage of every £3 6s. This gross profit is equivalent to over 62 per cent., but from it the expenses of coining (including interest on cost of machinery) and of withdrawals of worn coin must be deducted. Still, given a large annual demand for new silver coin, even the net profit amounts to a considerable sum. Negotiations, therefore, took place for a number of years between the Imperial authorities and the Governments of New South Wales and Victoria, which in 1898 resulted in permission being granted to the two Governments named to coin silver and bronze coin at the Sydney and Melbourne Mints for circulation in Australia. No steps were, however, taken in the matter, and as section 51 of the Commonwealth Constitution makes legislation concerning "currency, coinage, and legal tender" a federal matter, the question remained in abeyance until the latter part of 1908, when the Commonwealth Treasurer announced his intention of initiating the coinage of silver in the near future.

(iii.) *Coinage Bill.* In 1909 a coinage bill was introduced in the Commonwealth Parliament, which provided that the future Australian coinage should consist of the following coins:—In gold, £5, £2, £1, and 10s.; in silver, 2s., 1s., 6d., and 3d.; and in bronze, 1d. and $\frac{1}{2}$ d. Gold was to be legal tender up to any amount, silver up to 40s., and bronze up to 1s. Ultimately the coinage was to be undertaken in Australia, but for

the time an agreement was made with the authorities of the Royal Mint in London, under the terms of which the coinage was to be done in London on account of the Commonwealth Government. Orders were given for the immediate coinage of £200,000 worth of silver, viz., one million florins, one million shillings, one million sixpences, and two million threepences. The coins bear on the obverse H.M. the King's head, with the Latin inscription which appears on the British coins, and on the reverse the Australian coat-of-arms, with the denomination and the date. The Imperial authorities undertook to withdraw £100,000 worth of the present silver coinage per annum at its face value. The first consignment of the new coinage arrived in Australia early in 1910, and in a short time all the silver coins contracted for were supplied to the Royal mints, Australia. Copper coins of the value of £10,000, viz., 1,560,000 pennies and 1,680,000 half-pennies, of a design similar to that of the silver coins, were ordered. It is not, however, intended to withdraw any of the present copper coins, but merely to make good the "leakage," which is considerable. Possibly the time is not far distant when the copper coinage will be replaced by a nickel coinage.

6. Decimal Coinage.—Considered apart from the cognate subject of decimal weights and measures, the introduction of a decimal coinage would present no great difficulties. Of the various systems that have been advocated from time to time, the one that appears to meet with most favour and presents the maximum advantage, would retain the sovereign as the unit, but would divide it into a thousand parts instead of the present 960 farthings. In such a system there would be the following coins (adopting the name of "cent" for the hundredth part of the sovereign):—Sovereign = 100c. (gold); half-sovereign = 50c. (gold); 20c. = 4s. (gold or silver); 10c. = 2s. (silver); 5c. = 1s. (silver); 2c. = 4.8d. (silver); 1c. = 2.4d. (silver or nickel); 0.5c. or 5 mils. = 1.2d. (nickel or bronze); 0.2c. or 2 mils. = 0.48d. (nickel or bronze); 0.1c. or 1 mil. = 0.24d. (bronze). As only the subdivisions of the present shilling would be altered, such a system could be introduced with less disturbing effects on the arrangements of trade than other proposals, *e.g.*, one which would make the present farthing its unit. It will be seen from the terms of the Coinage Act, as quoted in the preceding paragraph, that no provision has been made for the introduction of a decimal coinage, apart from the omission of the half-crown.

7. Circulation of Specie.—Many conflicting estimates have from time to time been made as to the amount of coin in private hands. In 1892 the general manager of one of the Sydney banks estimated the coin in private hands in New South Wales at only £725,000, while the estimate of the Deputy-master of the Mint for the same period was £1,416,000, the truth lying, no doubt, somewhere between those two estimates. In 1906 the Deputy-master of the Perth Mint conducted an enquiry with the object of obtaining information on the condition of the currency in Australia. His estimate was—sovereigns, £2,500,000; half-sovereigns, £500,000; silver and bronze coin, £1,200,000. This estimate appears, however, very low, amounting only to a little over £1 per head of population. In this connection it may be of interest to notice that two similar estimates have recently been made in England and Germany respectively. The report for 1910 of the Comptroller of the British Imperial Mint contains an estimate of the amount of gold coin in active circulation in the United Kingdom in 1910, which is put at £113,000,000 or £2 10s. per head. More recently still, a German economist, Dr. Arnold, of the Reichsbank, estimated the amount of gold coin in active circulation in Germany at about £110,000,000, or £1 15s. per head. If the German ratio is supposed to prevail in Australia (the British ratio is almost certainly too high), this would lead to an estimate of about £8,000,000 for the amount of gold coin in active circulation in the Commonwealth. The coin in private hands amounts, however, only to a comparatively small part of the total in the country, the value of coin held by the banks during the quarter ended 30th June, 1912, being £27,581,368, whilst the Commonwealth Treasury at the same date held £4,279,007. To the active currency must be added the notes in circulation, which for the same period amounted to £536,984, exclusive of Queensland Treasury notes. For particulars relative to Australian notes, see page 802.

For information concerning the imports into the Commonwealth and exports from the Commonwealth of coin and bullion during the year 1911, the enquirer is referred to the tables on pages 615 and 616.

§ 2. Banking.

1. **Banking Facilities.**—(i.) *Head Offices of Banks.* Of the twenty-three banks trading in the Commonwealth, four have their head offices in London, viz., the Bank of Australasia; the Union Bank of Australia Limited; the English, Scottish and Australian Bank Limited; and the London Bank of Australia Limited. The head offices of the following four banks are in Sydney—The Bank of New South Wales, the Commercial Banking Company of Sydney Limited, the Australian Joint Stock Bank Limited (now the Australian Bank of Commerce Limited), and the City Bank of Sydney. Five banks have their head offices in Melbourne, viz., the National Bank of Australasia Limited, the Commercial Bank of Australia Limited, the Bank of Victoria Limited, the Colonial Bank of Australasia Limited, and the Royal Bank of Australia Limited. Brisbane is the headquarters of three banks, viz., the Queensland National Bank Limited, the Royal Bank of Queensland Limited, and the Bank of North Queensland Limited. Only one bank has at present its head office in Adelaide, viz., the Bank of Adelaide; and one in Perth, viz., the Western Australian Bank. Of the two Tasmanian banks, the Commercial Bank of Tasmania Limited has its head office in Hobart, and the National Bank of Tasmania Limited in Launceston. The Bank of New Zealand has its headquarters in Wellington. Of the two remaining banks—included for the first time—the Comptoir National d'Escompte has its head office in Paris, and the Ballarat Banking Company in Ballarat. It is proposed, in the few instances where the banks are referred to by name, to arrange them in the order just given.

(ii.) *Establishments in Different States.* Only four of the banks have establishments in all six States of the Commonwealth, the total number of their branches and sub-branches being 791. Two with 341 branches are established in four States. One bank has 61 branches distributed over three States, but has now also opened a branch in a fourth State, while another bank with 76 branches trades in three States only. Seven banks with a total of 421 branches confine their operations to two States. The remaining eight banks, with 350 branches, trade only within the State where their head offices are located. Two banks also have each a branch in the Northern Territory. Of this total of 2043 banking establishments, New South Wales contains 629, Victoria 666, Queensland 281, South Australia 236, Western Australia 172, Tasmania 57, and Northern Territory 2. In addition to the branches in the Commonwealth, four of the banks have a total of 304 establishments in New Zealand, while seventeen have each an office in London. Only three of the banks are established in the Pacific Islands, with a total of eight branches. The total for the Commonwealth amounts to about one bank to every 2250 inhabitants, which does not appear out of proportion when the general sparseness of the Australian population is taken into consideration. There is, however, a difference between the various States which is not easy of explanation, but which seems to be due chiefly to the desire of a few of the banks to open up branches wherever there is a prospect of a small amount of business, while other banks are more conservative in this respect. Thus the proportion in New South Wales is about 2760 inhabitants per bank, while in Victoria it is only 2030. This is probably owing to the fact that in Victoria, with its closer settlement, there are more centres where business can be made profitable. In Western Australia, where the proportion is lowest and amounts to about one in 1750, there are, of course, exceptional circumstances which explain this apparent overbanking.

2. **Banking Legislation.**—Under Section 51 of the Commonwealth Constitution Act the Commonwealth Parliament has power to legislate with respect to "Banking, other than State banking, also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money." Until quite

recently the only Commonwealth banking legislation passed was Act No. 27 of 1909, "An Act relating to Bills of Exchange, Cheques, and Promissory Notes," which came into force on the 1st of February, 1910. In the session of 1910, however, two Acts relating to banking were passed by the Federal Parliament. The first was the Australian Notes Act No. 11 of 1910, assented to on the 16th September, 1910, and proclaimed 1st November, 1910; and the second the Bank Notes Tax Act No. 14 1910, assented to on 10th October, 1910, and proclaimed 1st July, 1911. Under the first of these Acts the Commonwealth Treasurer is empowered to issue notes which shall be legal tender throughout the Commonwealth, and redeemable at the seat of Federal Government. The notes are issued in denominations of 10s., £1, £5, £10, or any multiple of £10. The Act directs the Treasurer to hold the following reserve of gold coin:—

- (a) An amount not less than one-fourth of the amount of Australian notes issued up to seven million pounds;
- (b) An amount equal to the amount of Australian notes issued in excess of seven million pounds;

For the purpose of estimating the reserve, notes which have been redeemed are not included amongst those issued.

The portion of the Act relating to the reserve has been amended by Act No. 21 of 1911, which was assented to on 22nd December, 1911. According to this amending Act the clause relating to the reserve now reads as follows:—"The Treasurer shall hold in gold coin a reserve of not less than one-fourth of the amount of Australian notes issued." It was intended that this amendment should come into force on 1st July, 1912, but the Federal Treasurer has since announced that its operation will be deferred until after the Commonwealth elections of 1913.

The Australian Notes Act prohibits the circulation of notes issued by a State six months after the commencement of the Act, and such notes will then cease to be legal tender. In addition the Bank Notes Act imposes a tax of 10 per cent. per annum in respect of all bank notes issued or re-issued by any bank in the Commonwealth after the commencement of this Act and not redeemed.

The Notes Act and the Bank Notes Act were supplemented in the following year by the passing of No. 18 of 1911, "An Act to provide for a Commonwealth Bank," which passed both Houses and was assented to on 22nd December, 1911. The bank thus authorised has no power to issue notes, but in every other respect it has the functions of an ordinary bank of issue. It is managed by a governor and a deputy-governor, who are appointed by the Governor-General and will hold office during good behaviour for a period of seven years, after which they will be eligible for reappointment. A novel feature is the establishment of a department dealing with savings bank business only. No further reference need be made here to this department; the framers of the Act have largely followed the lines laid down by the respective State Savings Bank Acts, particularly the Western Australian Act No. 9 of 1906. The capital of the bank is one million pounds, to be raised by the issue and sale of debentures. These debentures are for ten pounds or some multiple of ten pounds and redeemable at par, the Commonwealth guaranteeing interest and principal. All expenses incidental to the establishment of the bank are met by an advance from the Consolidated Revenue Fund, such advance to be ultimately repaid with interest at the rate of three-and-a-half per cent.

The first step in the organisation of the Bank was the appointment as Governor, from 1st June, 1912, of Mr. Denison Miller, of the Bank of New South Wales. Mr. James Kell, of the Bank of Australasia, was subsequently appointed Deputy-Governor, and the Bank was formally opened on 20th January, 1913, for the transaction of all general banking business. The result of the first day's operations was the deposit of £2,341,720, the bulk of which consisted of funds belonging to various departments of the Commonwealth Government. The opening of branches simultaneously at Sydney, Melbourne, Brisbane, Adelaide, Perth, Hobart, Townsville, Canberra, and London, marked the accomplishment of the provisions of the Commonwealth Bank Act of 1911. The Savings Bank Department, which came into existence six months previously, is dealt with in detail in the section on Savings Banks.

Under the existing laws banks are required to furnish quarterly statements of their average assets and liabilities, but these statements are not equally complete in all the States. Until the close of 1907 these quarterly statements, together with the periodical balance-sheets of the banks (generally half-yearly, but in a few cases yearly), were the only information available in regard to banking business. During the year 1908 the Commonwealth Statistician, under the provisions of the Census and Statistics Act, asked the banks for quarterly returns giving slightly more detailed information than had previously been obtained. As, however, a few of the banks have found it impossible up to the present to give all the particulars required, while promising to do so in future, the returns for the years 1908, 1909, 1910, 1911, and 1912 have been practically left in the same condition as those for 1907 and previous years.

The Acts under which the various banks are incorporated are not all of the same nature, but it may be stated that while most of the older banks were incorporated by special Acts, *e.g.*, the Bank of New South Wales, by Act of Council 1817; the Bank of Australasia, by Royal Charter; the Bank of Adelaide, by Act of the South Australian Parliament; and the Bank of New Zealand, by Act of the General Assembly of New Zealand, the newer banks are generally registered under a "Companies Act," or some equivalent Act. This is also the case with those banks which, after the crisis of 1893, were reconstructed.

3. Capital Resources of Banks.—The paid-up capital of the twenty-three banks, together with their reserve funds, and the rate per cent. and the amount of their last dividends, is shewn in the table hereunder. The information relates to the balance-sheet last preceding the 30th June, 1912. In regard to the reserve funds it must be stated that in the case of some of the banks these are invested in Government securities, while in other cases they are used in the ordinary business of the banks, and in a few instances they are partly invested and partly used in business.

CAPITAL RESOURCES OF ORDINARY BANKS.

Bank.	Paid-up Capital.	Rate per cent. per annum of last Dividend and Bonus.	Amount of last ½-yrly. Dividend & Bonus.	Amount of Reserved Profits.
	£	%	£	£
Bank of Australasia	1,600,000	14 & 12/-bonus ps.	136,000	1,926,073
Union Bank of Australia Limited	1,500,000	14	105,000	1,412,510
English, Scottish and Australian Bank Limited	539,438	7	37,761 ⁷	246,594
London Bank of Australia Limited	548,228 ¹	{ 7 Preferen. 5 Ordinary }	30,440 ⁷	145,043
Bank of New South Wales	3,000,000	10	150,000	2,085,000
Commercial Banking Company of Sydney Limited	1,718,894	10	75,000	1,594,540
Australian Bank of Commerce Limited	1,194,899	2½	14,850	16,222
City Bank of Sydney	400,000	4½	9,000	20,894
National Bank of Australasia Limited	1,498,220 ²	6	44,947	10,617
Commercial Bank of Australia Limited	2,212,969 ³	3 Preference	31,760	4,877
Bank of Victoria Limited	1,478,010 ⁴	6	44,340	287,765
Colonial Bank of Australasia Limited	439,280	7	15,375	183,710
Royal Bank of Australia Limited	300,000	8	12,000	173,943
Queensland National Bank Limited	413,591 ⁵	...	...	...
Royal Bank of Queensland Limited	542,315	5	13,421	77,407
Bank of North Queensland Limited	100,000	6	3,000	23,357
Bank of Adelaide	500,000	10	25,000	607,084
Western Australian Bank	250,000	20	25,000	651,984
Commercial Bank of Tasmania Limited	175,000	14	12,250	209,604
National Bank of Tasmania Limited	152,040	7	5,321	3,619
Bank of New Zealand	2,000,000 ⁶	{ 4 Preferen. 6 & 3 bonus Ordinary }	65,000	1,240,587
Comptoir National d'Escompte de Paris	8,000,000	7	560,000	1,520,303
Ballarat Banking Company Limited	85,000	7½	3,187	78,000
Total	28,647,884			12,419,733

1. £171,930 preferential, £376,268 ordinary. 2. £305,760 preferential, £1,192,440 ordinary. 3. £2,117,350 preferential, £95,298 ordinary. 4. £416,760 preferential, £1,061,250 ordinary. 5. After deducting £47,156 paid on forfeited shares. 6. £500,000 preference shares issued to the Crown under the "Bank of New Zealand Act 1903." £500,000 ordinary shares, and £1,000,000 guaranteed stock. 7. For 12 months.

4. **Liabilities and Assets of Banks.**—(i.) *Liabilities of Banks for Quarter ended 30th June, 1912.* As already stated, the banks transacting business in any State are obliged, under the existing State laws, to furnish a quarterly statement of their assets and liabilities, which contains the averages of the weekly statements prepared by the bank for that purpose, and they have, during the years 1908, 1909, 1910, 1911, and 1912, furnished quarterly statements to the Commonwealth Statistician. As all other financial returns in this work embrace, so far as possible, a period ended 30th June, 1912, it seems advisable to give the banking figures for the quarter ended on that date, and, where they are shewn for a series of years, similarly to use the figures for the June quarter of each year. The liabilities are those to the general public, and are exclusive of the banks' liabilities to their shareholders, which are shewn in the preceding table:—

AVERAGE LIABILITIES OF BANKS IN EACH STATE OF THE COMMONWEALTH AND THE NORTHERN TERRITORY FOR THE QUARTER ENDED 30th JUNE, 1912.

State.	Notes in Circulation, not bearing interest.	Bills in Circulation, not bearing interest.	Balances Due to other Banks.	Deposits.			Total Liabilities.
				Not Bearing Interest.	Bearing Interest.	Total.	
	£	£	£	£	£	£	£
New South Wales	226,150	418,503	177,132	27,937,494	30,292,077	58,229,571	59,051,356
Victoria	164,992	256,786	275,331	17,897,544	30,556,264	48,453,808	49,150,917
Queensland	*	216,568	122,289	8,859,715	11,452,192	20,311,907	20,650,764
South Australia	74,612	22,513	71,961	4,720,117	6,880,063	11,600,180	11,769,266
West. Australia	45,821	69,627	225,461	3,728,537	3,172,221	6,900,758	7,241,667
Tasmania	25,409	18,046	765	2,214,894	2,021,313	4,236,207	4,280,427
North. Territory	...	19	7	50,540	23,626	74,166	74,192
Commonwealth	536,984	1,002,062	872,946	65,408,841	84,397,756	149,806,597	152,218,589

* In Queensland, Treasury notes were used instead of bank notes.

(ii.) *Assets of Banks for Quarter ended 30th June, 1912.* The average assets of the banks are shewn in the following table:—

AVERAGE ASSETS OF BANKS IN EACH STATE OF THE COMMONWEALTH AND THE NORTHERN TERRITORY FOR THE QUARTER ENDED 30th JUNE, 1912.

State.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Government and Municipal Securities.	Landed and House Property.	Notes and Bills of other Banks.	Balances Due from other Banks.	Discounts Over-drafts, and all other Assets.	Australian Notes.	Total Assets.
	£	£	£	£	£	£	£	£	£
N.S.W.	12,116,947	196,110	3,840,522	1,930,319	*293,103	488,697	43,575,784	1,992,521	64,434,003
Victoria	7,583,187	307,370	233,662	1,642,971	677,969	506,014	37,843,360	1,216,648	50,011,681
Q'land	3,207,316	98,609	250,170	719,581	+93,364	395,316	17,763,880	904,791	23,435,027
S. Aust.	2,141,243	1,641	118,359	318,526	61,036	109,110	8,565,340	589,048	11,904,303
W. Aust.	1,784,517	497,714	147,897	217,530	40,289	53,179	8,360,993	516,080	11,568,199
Tas. ...	794,037	65	197,338	126,466	5,744	209,385	2,857,565	205,834	4,396,434
Nor.Ter.	4,121	2,635	...	1,200	1	...	3,755	9,897	21,609
Cwlth.	27,581,368	1,104,644	4,787,948	4,956,593	1,171,506	1,761,701	118,972,677	5,434,819	165,771,256

* Including Queensland Treasury Notes, £15.

+ " " " " " £2533.

(iii.) *Liabilities of Banks for June Quarter, 1903 to 1912.* In the subjoined table, which shews the average liabilities of the banks for the quarters ended 30th June, 1903 to 1912, for the Commonwealth as a whole, it will be seen that the growth in total liabilities is almost entirely due to an increase in the deposits, and that deposits not bearing interest and deposits bearing interest have shared in that increase very equally:—

**AVERAGE LIABILITIES OF BANKS IN THE COMMONWEALTH FOR THE QUARTER
ENDED 30th JUNE IN THE YEARS 1903 to 1912.**

Year.	Notes in Circulation not Bearing Interest.	Bills in Circulation not Bearing Interest.	Balances due to other Banks.	Deposits.			Total Liabilities.
				Not Bearing Interest.	Bearing Interest.	Total.	
	£	£	£	£	£	£	£
1903	3,315,747	539,132	407,947	37,056,187	54,701,047	91,757,234	96,020,060
1904	3,133,268	521,267	230,441	35,630,255	55,917,648	91,548,103	95,493,079
1905	3,036,879	555,256	446,555	36,647,610	61,235,775	98,143,385	102,182,075
1906	3,244,256	568,670	577,094	41,036,116	65,479,150	106,515,266	110,905,286
1907	3,563,161	801,878	444,460	46,781,234	65,916,735	112,697,969	117,507,488
1908	3,536,227	707,903	786,447	46,015,448	67,678,940	113,694,388	118,734,965
1909	3,510,629	720,853	555,806	46,812,632	70,945,623	117,758,255	122,545,543
1910	3,748,482	821,758	570,115	55,233,862	74,657,274	129,891,136	135,031,491
1911	3,718,458	928,663	741,188	62,226,897	81,220,013	143,446,910	148,835,219
1912	536,984	1,002,062	872,946	65,408,841	84,397,756	149,806,597	152,218,589

(iv.) *Assets of Banks for June Quarter, 1903 to 1912.* A similar table shewing the average assets of the banks for the June quarters of each of the years 1903 to 1912 is shewn below. Bullion, in the case of the Tasmanian banks, is included with coin in the years 1903 to 1907.

**AVERAGE ASSETS OF BANKS IN THE COMMONWEALTH FOR THE QUARTER
ENDED 30th JUNE IN THE YEARS 1903 to 1912.**

Year.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Landed and other Property.	Notes and Bills of other Banks.	Balances Due from other Banks.	All other Debts Due to the Banks.*	Total Assets.
	£	£	£	£	£	£	£
1903	18,513,784	1,507,825	5,289,440	741,977	1,115,369	93,301,160	120,469,555
1904	17,910,771	1,447,698	5,245,312	692,688	781,368	87,705,222	113,783,059
1905	19,988,465	1,501,890	5,212,799	705,089	809,929	85,766,259	113,984,431
1906	21,268,679	1,412,763	5,160,875	802,225	1,234,921	87,889,121	117,768,584
1907	22,420,395	1,291,033	5,028,379	840,217	1,170,276	94,990,435	125,740,735
1908	23,578,293	1,353,267	4,938,212	889,377	1,131,612	101,647,044	133,537,805
1909	24,943,910	1,353,933	4,852,471	932,354	1,153,611	98,481,421	131,717,700
1910	28,826,729	1,322,899	4,919,991	973,161	1,343,669	101,371,817	138,758,266
1911	32,330,705	1,140,065	4,937,437	1,279,714	1,698,097	118,179,425	159,565,443
1912	27,581,368	1,104,644	4,956,593	1,168,958	1,761,701	129,197,992	165,771,256

* Including Queensland Treasury notes, Government and Municipal securities, and Australian notes.

The figures do not call for much comment. As the table shews, the increase in the total amount of assets is partly due to an increase in the amount of specie held by the banks against liabilities at call, and partly to advances.

5. Percentage of Coin, Bullion, and Australian Notes to Liabilities at Call.—

(i.) *Commonwealth.* Although it is not strictly correct to assume that the division of deposits into those bearing interest and not bearing interest would in every case coincide with a division into fixed deposits and current accounts, the division, in default of a better one, must be adopted, and in the following table "liabilities at call" are therefore understood to include the note circulation of the banks and the deposits not bearing interest:—

**PERCENTAGE OF COIN, BULLION AND AUSTRALIAN NOTES TO LIABILITIES AT
CALL, COMMONWEALTH BANKS, 1903 to 1912.**

Year.	Liabilities at Call.	Coin, Bullion, and Australian Notes.	Percentage to Liabilities at Call.
	£	£	%
1903	40,371,934	20,021,609	49.59
1904	38,763,523	19,358,469	49.94
1905	39,884,489	21,490,355	53.88
1906	44,280,372	22,681,442	51.22
1907	50,344,415	23,711,428	47.10
1908	49,551,675	24,931,560	50.31
1909	50,323,261	26,297,843	52.26
1910	58,982,344	30,149,628	51.12
1911	65,945,355	33,470,770	50.76
1912	65,945,825	34,120,881	51.74

It would appear from the figures just given that the banks generally consider it advisable to hold about half the amount of liabilities at call in coin and bullion. The drop to 47.10 per cent. in 1907 was due to the very large increase in the amount of deposits during the year, and to the fact that the increase in the coin and bullion held, considerable though it was, did not keep pace therewith.

(ii.) *Queensland Treasury Notes.* No bank-notes are issued by any of the banks in Queensland, where a Treasury note has taken the place of bank-notes since 1893. These Treasury notes are disregarded in the quarterly statements of the banks; according to Treasury returns the amount outstanding on 30th June, 1912, was £61,018, partly in circulation, and the balance held by the banks. Under the Australian Notes Act, the issue of notes by a State is now prohibited.

(iii.) *States.* The proportion of coin, bullion and Australian Notes to liabilities at call varies considerably in the different States, and is generally highest in Western Australia, and lowest in Queensland and Tasmania. A table is appended shewing the percentages for each State for the quarter ended 30th June in each of the years 1903 to 1912:—

**PERCENTAGE OF COIN, BULLION AND AUSTRALIAN NOTES TO LIABILITIES AT
CALL, COMMONWEALTH BANKS, 1903 to 1912.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
	%	%	%	%	%	%	%	%
1903 ...	47.47	50.58	46.33	50.12	61.83	42.20	...	49.59
1904 ...	48.67	52.92	39.66	51.45	58.70	46.41	...	49.94
1905 ...	50.51	58.01	45.78	55.66	67.35	44.25	...	53.88
1906 ...	48.49	53.55	40.43	51.25	73.98	42.39	...	51.22
1907 ...	44.81	49.17	37.20	46.73	71.14	39.84	...	47.10
1908 ...	47.70	54.68	41.09	45.63	76.09	40.06	...	50.31
1909 ...	50.38	56.57	39.68	46.90	83.29	41.48	...	52.26
1910 ...	51.33	51.66	39.78	48.27	81.09	37.77	...	51.12
1911 ...	52.28	45.05	43.60	51.64	86.55	35.13	16.27	50.76
1912 ...	50.79	50.42	47.53	56.98	72.82	44.63	32.95	51.74

6. Deposits and Advances.—(i.) *Total Deposits.* The total amount of deposits held by the banks shews a steady advance during the period under review, although the totals for 1903 and 1904, when the country was slowly recovering from the effects of the drought, were slightly below those for 1902:—

TOTAL DEPOSITS IN COMMONWEALTH BANKS, 1903 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
1903	33,309,691	30,719,334	12,645,725	6,603,225	4,785,839	3,693,420	...	91,757,234
1904	33,058,342	31,188,971	12,626,184	6,375,267	4,726,158	3,573,181	...	91,548,103
1905	35,972,265	33,642,092	12,987,859	6,892,103	4,999,650	3,649,416	...	98,143,385
1906	39,099,630	36,764,392	13,665,110	7,513,802	5,645,701	3,826,631	...	106,515,266
1907	41,967,265	38,393,179	14,852,584	8,247,366	5,500,112	3,737,463	...	112,697,969
1908	43,616,984	37,538,722	15,328,056	8,644,346	4,894,639	3,671,641	...	113,694,388
1909	44,626,194	38,611,731	16,138,931	9,727,879	4,987,894	3,665,626	...	117,758,255
1910	50,018,885	41,809,708	17,420,034	10,782,890	6,129,668	3,729,951	...	129,891,136
1911	55,232,458	46,363,615	19,633,309	11,128,300	7,280,392	3,759,486	59,350	143,446,910
1912	58,229,571	48,453,808	20,311,907	11,600,180	6,900,758	4,236,207	74,166	149,806,597

(ii.) *Deposits per Head of Population.* To shew the extent to which the population makes use of the banking facilities afforded to it, a table is given hereunder shewing the amount of total deposits per head of mean population for each of the years 1903 to 1912. The figures must not be taken as representative of the savings of the people, as a large proportion of the deposits is non-interest-bearing and therefore presumably used in the business of the banks' customers, together with a small part of the interest-bearing deposits.

DEPOSITS PER HEAD OF POPULATION IN COMMONWEALTH BANKS, 1903 to 1912.

Year.	N.S.W.			Victoria.			Q'land.			S. Aust.			W. Aust.			Tasmania.			Northern Territory.			C'wealth.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1903	23	12	3	25	9	7	24	12	7	18	7	6	21	18	10	20	10	7	...	...	...	23	15	1
1904	23	0	6	25	18	11	24	4	10	17	13	5	20	6	8	19	11	1	...	...	...	23	5	4
1905	24	10	7	27	18	6	24	12	1	18	19	0	20	7	1	19	16	4	...	...	...	24	11	8
1906	26	1	4	30	6	8	25	10	10	20	10	1	22	5	0	20	15	8	...	...	...	26	5	10
1907	27	5	8	31	7	2	27	9	1	22	5	0	21	10	8	20	6	6	...	...	...	27	7	11
1908	27	15	6	30	6	8	27	15	0	22	14	11	19	0	8	19	12	10	...	...	...	27	3	5
1909	28	0	4	30	14	0	28	8	6	24	17	5	19	0	4	19	6	1	...	...	...	27	12	8
1910	30	13	5	32	14	9	29	11	6	27	1	2	22	14	10	19	11	0	...	...	...	29	16	5
1911	33	9	1	35	1	10	32	2	2	27	3	7	25	11	0	19	7	7	17	17	0	32	1	8
1912	34	15	5	35	11	1	32	13	0	27	14	10	23	9	2	21	17	11	22	16	8	32	15	10

(iii.) *Total Advances.* In the quarterly statements furnished by the banks the column headed "all other debts due to the banks," which usually average from 75 to 80 per cent. of the total assets, is made up of such miscellaneous items as bills discounted, promissory notes discounted, overdrafts on personal security, overdrafts secured by deposit of deeds or by mortgage, etc. The quarterly returns furnished to the Commonwealth Statistician in 1908 and 1909 provided for a division of the amounts contained under this heading into a number of sub-headings, but all the banks were not in a position to make the necessary division, so that under present circumstances it is impossible to separate these items, and the total amounts contained in the column must, therefore, be treated as advances. The following table shews the totals for each State during the years 1903 to 1912:—

ADVANCES BY COMMONWEALTH BANKS, 1903 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania	Northern Territory.	C'wealth.
	£	£	£	£	£	£	£	£
1903	38,658,565	29,905,949	14,082,725	4,428,983	3,683,451	2,541,487	...	93,301,160
1904	33,237,755	29,426,052	13,974,233	4,401,991	3,955,108	2,710,083	...	87,705,222
1905	31,965,017	28,593,201	13,590,333	4,793,936	4,172,983	2,650,789	...	85,766,259
1906	32,057,192	29,699,683	13,850,921	5,053,184	4,635,624	2,592,517	...	87,889,121
1907	34,460,963	31,894,070	15,076,455	5,545,346	5,140,911	2,872,660	...	94,990,435
1908	37,948,889	33,254,780	15,245,537	5,805,575	5,581,001	3,008,237	...	100,844,019
1909	34,853,220	31,455,141	14,499,669	5,699,546	5,354,518	2,715,648	...	94,607,742
1910	34,809,345	33,064,881	14,167,480	6,426,809	5,889,061	2,722,645	...	97,080,221
1911	39,001,933	35,792,928	15,639,657	8,018,597	7,327,529	2,796,045	2,085	108,578,774
1912	43,575,784	37,843,360	17,765,880	8,565,340	8,360,993	2,857,565	3,755	118,972,677

(iv.) *Proportion of Advances to Deposits.* The percentage borne by advances to total deposits shews to what extent the needs of one State have to be supplied by the resources of another State, and where the percentage for the Commonwealth as a whole exceeds 100, as it did in 1901, 1902, and 1903, the banks must have supplied the deficiency from their own resources, or from deposits obtained outside the Commonwealth. The following figures shew, however, that the banking business of the Commonwealth has been practically self-contained during the period under review:—

**PERCENTAGE OF ADVANCES TO TOTAL DEPOSITS, COMMONWEALTH BANKS,
1903 to 1912.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
	%	%	%	%	%	%	%	%
1903	116.06	97.35	111.86	67.07	76.97	68.81	...	101.68
1904	100.54	94.35	110.68	69.05	83.69	75.85	...	95.80
1905	88.86	84.99	104.64	69.56	83.47	72.64	...	87.39
1906	81.99	80.78	101.36	67.25	82.11	67.75	...	82.51
1907	82.11	83.07	101.51	67.24	93.47	76.86	...	84.29
1908	87.00	88.59	99.46	67.16	114.00	81.93	...	88.70
1909	78.10	81.47	89.84	58.59	107.95	74.08	...	80.34
1910	69.59	79.08	81.33	59.60	96.07	72.99	...	74.74
1911	70.63	77.20	79.66	72.06	100.65	74.37	3.51	75.69
1912	74.83	78.10	87.47	73.84	121.16	67.46	5.06	79.42

7. Clearing Houses.—The Sydney Banks' Exchange Settlement and the Melbourne Clearing House, at which two institutions settlements are effected daily between the banks doing business in New South Wales and Victoria respectively, publish figures of the weekly clearances effected. From these figures it appears that in 1912 the total clearances in Sydney amounted to £330,621,000, and in Melbourne to £303,463,000. These figures represent in both cases an increase on those for 1911, the increase in Sydney amounting to £26,133,000, and in Melbourne to £13,350,000. Owing to the different distribution of the banking business in the two cities these figures do not, however, afford a fair comparison of the volume of banking business transacted in Sydney and Melbourne.

§ 3. Companies.

1. General.—Returns in regard to registered companies are defective, and, with few exceptions, are not available for Tasmania. They embrace (a) Returns relating to Trustees, Executors and Agency Companies; (b) Returns relating to Registered Building and Investment Societies; and (c) Returns relating to Registered Co-operative Societies.

2. Trustees, Executors and Agency Companies.—Returns are available of seven Victorian, two New South Wales, one Queensland, one South Australian, one Western Australian, and two Tasmanian companies. The paid-up capital of these fourteen companies amounted to £453,922; reserve funds and undivided profits to £355,082; other liabilities, £100,239; total liabilities, £909,243. Among the assets are included:—Deposits with Governments, £140,100; other investments in public securities, fixed deposits, etc., £236,947; loans on mortgage, £123,641; property owned, £259,735; other assets, £148,820. The net profits for the year were £72,702, and the amount of dividends and bonuses £39,680. Returns as to the amount at credit of estates represented by assets are available for only six companies, viz.:—Two Victorian, one New South Wales, one Queensland, one South Australian, and one Western Australian, the total shewn being £26,652,614.

Probably nearly £20,000,000 would have to be added to this amount for the remaining eight companies, so that the total amount would not be far short of £45,000,000. None of these companies receive deposits, and advances are only made under exceptional circumstances, and to a very limited extent, the total so shewn in the last balance-sheets being but £47,271.

3. **Registered Building and Investment Societies.**—Returns have been received of a total of 191 societies, viz., 99 in New South Wales, 36 in Victoria, 14 in Queensland, 27 in South Australia, 11 in Western Australia, and 4 in Tasmania. The balance-sheets cover various periods ended during the second half of 1911 and the first half of 1912, so that the returns may be assumed to roughly correspond to the financial year 1911-12. The liabilities of the societies are stated as follows:—

LIABILITIES OF REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1911-12.

State.	Paid-up Capital or Subscriptions.	Reserve Funds.	Deposits.	Bank Over-drafts and other Liabilities.	Total Liabilities.
	£	£	£	£	£
New South Wales	419,500	407,471	473,910	67,162	1,368,043
Victoria ...	1,290,075	228,506	695,307	303,130	2,517,018
Queensland ...	409,983	28,249	96,818	31,581	566,631
South Australia ...	344,778	7,464	2,908	9,107	364,257
Western Australia	104,884	...	7,992	14,069	126,945
Tasmania ...	91,553	51,325	155,378	6,446	304,702
Commonwealth ...	2,660,773	723,015	1,432,313	431,495	5,247,596

The assets of the companies for the same period were as follows:—

ASSETS OF REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1911-12.

State.	Advances on Mortgage.	Landed and House Property, Furniture, etc.	Cash in Hand and on Deposit and other Assets.	Total Assets.
	£	£	£	£
New South Wales ...	1,263,909	65,396	116,358	1,445,663
Victoria ...	1,730,780	626,525	146,083	2,503,388
Queensland ...	544,084	14,145	17,249	575,478
South Australia ...	351,210	3,792	23,737	378,739
Western Australia ...	121,161	25	5,759	126,945
Tasmania ...	278,608	7,990	18,104	304,702
Commonwealth ...	4,289,752	717,873	327,290	5,334,915

Statistical information, so far as is available, is furnished in the following table:—

REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1911-12.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of societies ...	99	36	14	27	11	4	191
Number of shareholders ...	*	11,206	4,831	9,572	2,825	2,276	30,710†
Number of shares ...	*	*	683,715	22,392‡	8,010	10,679	724,786‡
Number of borrowers ...	*	9,335	3,746	2,268	946	1,464	17,753†
Income for year from interest ...	*	130,421	35,060	15,511	§	18,183	199,175†
Working expenses for year ...	*	61,745	6,308	6,576	2,441	3,394	80,464†
Amount of deposits during year ...	*	495,062	64,659	26,680	25,370	40,732	652,503†
Repayment of loans during year ...	*	496,748	154,539	85,776	39,843	69,445	846,351†
Loans granted during year ...	*	455,288	205,369	128,623	30,442	57,064	876,786†

* Not available. † Exclusive of New South Wales. ‡ Exclusive of New South Wales and Victoria. § Included in repayment of loans.

4. **Registered Co-operative Societies.**—Returns are available of 95 societies, of which 36 were in New South Wales, 41 in Victoria, 5 in Queensland, 8 in South Australia, and 5 in Western Australia. As in the case of Building and Investment Societies, so in the case of Co-operative Societies do the balance-sheets cover various periods ended during the financial year 1911-12. The liabilities of the 95 societies are shown in the following table:—

LIABILITIES OF REGISTERED CO-OPERATIVE SOCIETIES, 1911-12.

State.	Paid-up Capital.	Reserve Funds.	Bank Over-drafts and Sundry Creditors.	Other Liabilities, Profit and Loss Account, &c	Total Liabilities.
	£	£	£	£	£
New South Wales ...	188,201		86,672	...	224,873
Victoria ...	128,512	17,356	143,895	40,248	390,011
Queensland ...	8,017	2,073	2,445	192	12,727
South Australia ...	125,285	12,984	15,147	28,344	176,710
Western Australia ...	6,426	1,144	49,123	34,432	91,125
Commonwealth* ...	439,948		297,282	98,216	835,446

* Exclusive of Tasmania.

The assets of the societies are shown hereunder:—

ASSETS OF REGISTERED CO-OPERATIVE SOCIETIES, 1911-12.

State.	Stock and Fittings.	Cash in Hand and Sundry Debtors.	Freehold and other Property and other Assets.	Total Assets.
	£	£	£	£
New South Wales ...	144,972	181,372	...	326,344
Victoria ...	187,237	97,916	104,243	339,396
Queensland ...	9,932	5,253	...	15,185
South Australia ...	98,080	37,108	51,843	186,981
Western Australia ...	70,857	20,154	114	91,125
Commonwealth* ...	461,028	341,803	156,200	959,031

* Exclusive of Tasmania.

The following table gives statistical information, so far as available:—

REGISTERED CO-OPERATIVE SOCIETIES, 1911.

	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of societies on 31st Dec., 1911	96	41	5	8	5	*	95†
Total No. of members on 31st Dec., 1911	23,083	20,651	13,879	10,248	742	*	68,603†
Total income for year 1911 ... £	*	527,006	20,423	388,881	264,107	*	1,200,417
Working expenses for year ended 31st December, 1911 ... £	*	96,973	19,225	55,998	273,427	*	445,623‡

* Not available. † Exclusive of Tasmania. ‡ Exclusive of Tasmania and New South Wales.

§ 4. Savings Banks.

1. **General.**—The total number of savings banks, with their branches and agencies, in the Commonwealth, closely approximates to that of ordinary banks, and at the middle of 1912, numbered 1941, distributed as follows:—New South Wales, 677; Victoria, 422; Queensland, 288; South Australia, 247 (exclusive of 232 school penny savings banks); Western Australia, 162 (exclusive of 221 school penny savings banks); and Tasmania, 145.

In the following tables the figures for Victoria, Queensland, South Australia and Western Australia refer to financial years ended 30th June, and those of New South Wales to calendar years ended 31st December next preceding. In the case of Tasmania figures for the two joint-stock savings banks are made up to the last day of February in each year, and those for the Government Savings Bank to the 30th June, except in the years prior to 1906, where they relate to the year ended 31st December.

2. **Depositors.**—The total number of depositors, *i.e.*, of persons having accounts open, not of those making deposits, in each of the last ten years is shewn in the following table:—

NUMBER OF DEPOSITORS IN SAVINGS BANKS, 1902-3 to 1911-12.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1902-3	323,212	418,511	80,043	137,147	48,008	46,451	1,053,372
1903-4	331,956	432,867	80,959	141,572	54,873	47,904	1,090,131
1904-5	355,824	447,382	84,165	146,366	59,764	49,438	1,142,939
1905-6	364,039	466,752	88,026	152,487	63,573	50,731	1,185,608
1906-7	392,050	491,318	92,912	161,855	66,737	53,817	1,258,689
1907-8	421,928	511,581	100,324	*174,289	†72,178	55,620	1,335,920
1908-9	436,029	532,425	106,627	†187,482	\$77,748	58,145	1,398,456
1909-10	460,251	560,515	114,720	†201,275	\$86,166	60,646	1,483,573
1910-11	498,658	595,424	127,219	†216,480	\$99,017	63,314	1,600,112
1911-12	544,023	641,736	139,091	†232,971	\$111,078	67,105	1,736,004

*Inclusive of 2011 depositors in school penny savings banks.

† " " 2645 " " " " " " in 1909, 6881 in 1910, 8436 in 1911, and 9983 in 1912.
 ‡ " " 4607 " " " " " " 6781 " 9578 " " 12,399 "

The subjoined table shews the above figures in relation to the population of the States; it must, of course, be borne in mind that savings bank accounts are not restricted to the adult population, but that it is, on the contrary, a very usual practice to open accounts in the names of children. Even so, the proportion is a large one, amounting in the case of the Commonwealth to more than one-third, and rising in Victoria to nearly one-half, and in South Australia to more than one-half.

DEPOSITORS IN SAVINGS BANKS PER 1000 OF POPULATION, 1902-3 to 1911-12.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1902-3	231	346	156	379	226	259	272
1903-4	233	359	156	392	244	262	278
1904-5	244	371	160	403	250	267	288
1905-6	245	386	166	416	254	272	294
1906-7	258	403	172	437	262	290	308
1907-8	270	415	184	462	284	293	321
1908-9	275	426	191	481	299	303	330
1909-10	285	439	199	508	324	314	343
1910-11	303	458	212	528	358	327	362
1911-12	325	471	224	553	378	347	380

3. **Administration of Savings Banks.**—The following table, relating to the Government Savings Banks of the several States, gives information on such points as administration, maximum and minimum deposits, rate of interest allowed, investment of funds, etc.

PARTICULARS RELATING TO

State, Bank and Acts in Force.	Administration and Management.	Appointment of Administrators or Managers.	Payment of Administrators or Managers.	Quorum.	Departments and Branches.	Minimum and Maximum Deposits.
New South Wales <i>Savings Bank of N.S.W.</i> Acts Nos. 53 & 99 of 1902.	Managed by trustees, not exceeding 18, in addition to the Governor as President.	Trustees appointed by Governor, who also nominates the Vice-President. The managing Trustee is appointed by Governor on the nomination of the Trustees.	The managing Trustee is paid out of the funds of the Bank. Other Trustees and district Trustees may not receive emolument.	Four Trustees.	The Trustees may appoint an Accountant for each district for which district Trustees are appointed.	From 1s. to £200.
<i>Government Savings Bank.</i> Act No. 48 of 1906.	Administered, governed, and managed by 3 Commissioners, of whom one is President.	Appointed by the Governor by commission in His Majesty's name; to hold office during ability and good behaviour. Provision to appoint deputies in case of illness, suspension, or absence.	The President is paid £1200 per annum; each of the other Commissioners £900 per annum.	Two Commissioners	(i.) Savings Bank Department. (ii.) Advances Department. Commissioners may establish branches and agencies; these may be at post-offices, subject to such terms as may be agreed upon between Governor and Governor-General.	(Not specified in Act.)
Victoria— <i>The Savings Bank.</i> Acts Nos. 1138 of 1890, 1481 of 1896, 1709 and 1722 of 1900, 1778 of 1901, 1878 of 1903, and 2280 of 1910.	General control of administration and the sole investment of funds in the hands of 5 Commissioners. General management is in hands of Inspector-General.	Commissioners appointed by Governor-in-Council; the Chairman is also appointed annually by the Governor-in-Council on the nomination of a majority of the Commissioners. The Inspector-General is appointed by the Commissioners with the approval of the Governor-in-Council. Commissioners to hold office during good behaviour; provision for appointment of deputy Chief Commissioner in case of illness, etc.	Each Commissioner is paid 2 guineas and the Chief-Commissioner 3 guineas for each attendance, but the amount paid to any one Commissioner must not exceed £210 per annum, nor to the Chief Commissioner, £315 per annum. The salary of the Inspector-General may not exceed £1500 per annum.	Three Commissioners.	(i.) Savings Bank Department. (ii.) Advances Department. Commissioners may establish banks at any place in Victoria; each bank to be a separate and independent institution having separate and distinct Trustees and officers. Trustees (two or more in number) are appointed by Commissioners.	From 1s. to £1000.

ADMINISTRATION OF SAVINGS BANKS.

Interest.		Management and Investment of Funds.	Loans on Mortgage.	Reserve and other Funds.	Borrowing and Security of Depositors.
Rate.	Amount on which Payable.				
To be fixed from time to time by Trustees.	Any sum over £1, but the Trustees may limit the interest so as not to be payable on the surplus over £100.	The Trustees may (i.) deposit funds either (a) in the Colonial Treasury or (b) in any bank in N.S.W., or (ii.) may invest funds in debentures and other securities, or (iii.) may purchase bills of exchange drawn on any bank in N.S.W. to an amount not exceeding one-quarter of the funds.	Trustees may lend money on mortgage provided (i.) no mortgage to any one person may exceed £24,000, and (ii.) not more than three-fourths of the total deposits may be lent on mortgage. The land must be held in fee-simple and unencumbered.	The Trustees must set aside annually out of the profits such sum, being not less than one-twentieth nor more than one-fifth of the total interest produced during the year, as they think proper, towards the establishment of a security fund, to equalise rate of interest and meet losses or deficiency.	The Trustees may borrow the amount required to meet the demands of depositors and the Governor may guarantee its repayment. The amount borrowed and outstanding at any time so guaranteed may not exceed £50,000, without the previous consent of the Legislative Assembly. Special loans to meet any sudden demand upon the funds, may be raised upon the security of the property and revenues of the bank.
Commissioners must fix rate of interest, and may fix differential rates according to amount of deposit.	Any sum from £1 to £500, and over the latter amount in case of accounts of (i.) Friendly Societies, etc., and (ii.) the Advance Department.	All moneys received to be invested and held (i.) as to 15% to consist of cash and deposits at Treasury and in banks of issue in N.S.W. available at call or short notice, and (ii.) as to the balance to be invested in business premises of the Commissioners, mortgages, Government securities of any State of the Commonwealth, debentures of the Advance Dept., debentures of any municipality in N.S.W.	Loans may be on first mortgage from £50 to £25,000 to any one person. Any one loan may not exceed three fifths of the value of the interest of the borrower in the lands and buildings. The mortgage must be registered and dates must be fixed for repayment of principal and interest.	Same provisions as above, provided that the Governor may suspend the operations of such provisions.	The Commissioners may borrow, and the Governor may guarantee repayment of, moneys required to meet demands of depositors; the Governor shall obtain from Commissioners such security as he may deem necessary. The Governor may, upon like security, direct advances to be made out of Consolidated Revenue. Such advances must be reported to both Houses of Parliament.
To be fixed from time to time by the Commissioners but may not exceed 5 per cent.	Interest allowed on sums from £1 to £350, and is added yearly on 30th June. (Acts provide that interest may not be paid on surplus over £500, or such other less sum as the Commissioners may appoint.)	All deposits must within one week of their receipt be paid into the appointed bank in Melbourne. Deposits in the country banks must be remitted to the Commissioners. Funds must be invested as follows:—(i.) Not more than 15% to be deposited with the Government Bankers. (ii.) Not more than three-tenths of the balance in mortgages or municipal loans. (iii.) As nearly as possible seven-tenths of such balance in Treasury Bills, mortgage bonds, and debentures.	The Commissioners may lend any sum on first mortgage of fee-simple lands, and may lend to corporations of Melbourne or Geelong and to the council of any shire or borough any sums not exceeding in the aggregate the average revenues for the period of three years. The amount lent to any one person is limited to £25,000, and may not exceed three fifths of the value of property mortgaged.	No provision except in regard to Advances Dept.	The Governor with the advice of the Executive Council may guarantee the repayment of any loan necessary to meet the demands of depositors, but the loans outstanding at any time may not exceed £100,000.

PARTICULARS RELATING TO—

State, Bank and Acts in Force.	Administration and Management.	Appointment of Administrators or Managers.	Payment of Administrators or Managers.	Quorum.	Departments and Branches.	Minimum and Maximum Deposits.
Queensland— <i>Government Savings Bank.</i> Acts Nos. 24 of 1853 (N.S.W.), 25 of 1854 (N.S.W.), 8 of 1861, 2 of 1864, 17 of 1865, 10 of 1870, 6 of 1872, 2 of 1882, 31 of 1894, 20 of 1895, 4 of 1896, and 8 of 1897.	Administration controlled by the Colonial Treasurer. The actual management in hands of a "manager."	Appointed by Governor.	Not specified.	...	On the application of ten or more house or landholders, the Governor - in - Council may by a proclamation establish a Savings Bank in any town in Queensland having not less than 500 inhabitants. Police, magistrates and other officers may be directed by the Governor - in - Council to receive deposits of not less than 5 shillings.	From 1s. upwards.
South Australia— <i>Government Savings Bank.</i> Acts Nos. 22 of 1875, 824 of 1903, and 925 of 1907.	Managed by 6 Trustees, 2 of whom retire every 2 years.	Appointed by the Governor. Chairmen elected by Trustees. The Board must meet at least once in each week except in the month of December.	Each Trustee is paid 2 guineas for each meeting attended, provided that no Trustee may receive more than one fee for any one week.	Four Trustees.	(i.) Trustees may establish branches at such places in the State as they may select. (ii.) They are also empowered to establish a department designated "The Penny Bank Department."	From 1s. to £500, but deposits of Friendly Societies are unlimited. In the Penny Bank Dept. any sum not less than one penny may be deposited.
Western Australia <i>Government Savings Bank.</i> Act No. 9 of 1906	Managed by a "Manager" under the control of the Treasurer.	Appointed by Governor.	Not specified.	...	Governor may arrange with Governor-General for performance of duties in respect of the Savings Bank by officers of the P.M.G.'s Dept. and the Governor may authorise such officers, or any other person, to receive deposits for remittance to the head office.	From 1s. to £1000, but a Friendly Society may in any one year deposit any amount not exceeding £1000.
Tasmania— <i>Government Savings Bank*</i> Act No. 9 of 1910	Managed by an "Actuary" under the control of the Treasurer.	Actuary and other officers subject to the Public Service Act.	No provision.	...	Same as W.A.	Not less than 1s. No maximum is specified.

* There are also the Hobart Savings Bank and the Launceston

ADMINISTRATION OF SAVINGS BANKS—Continued.

Interest.		Management and Investment of Funds.	Loans on Mortgage.	Reserve and other Funds.	Borrowing and Security of Depositors.
Rate.	Amount on which Payable.				
To be fixed by Governor-in-Council, but not to be more than 5 per cent.	No interest on deposits exceeding £500, except in case of funds of registered Friendly Societies or any other Society or Corporation excepted by the Governor-in-Council.	Deposits must be paid within 24 hours into the appointed bank in Brisbane. (i.) Two-thirds at least of the funds must be invested in Government Debentures or Treasury bills. (ii.) The remaining third to be retained by Colonial Treasurer to carry on business of the Bank. Debentures and bills to vest in President of Legislative Council, Speaker of Legislative Assembly, and the Colonial Treasurer. The Governor may authorise the issue of 3½ per cent. (or less) Savings Bank Stock to an amount up to £2,000,000, redeemable in 1945.	...	...	The Governor may guarantee upon the security of the general revenue of the State the repayment of any money, the loan of which is necessary to meet the demands of depositors. Loans outstanding may not exceed £10,000 without previous consent of the Legislative Council.
To be fixed by Trustees.	No interest on deposits exceeding £250, but in case of Friendly Societies interest at a rate not exceeding one-half the ordinary rate is paid on the surplus over £250.	Funds may be invested in (i.) Government securities of any State or the Commonwealth. (ii.) Securities of any Municipal Corporation in S.A. (iii.) Deposits in any other bank in S.A. (iv.) Deposits in the Treasury.	Trustees may lend money on mortgage of estates in fee-simple, but no new mortgage may be taken by Trustees, so long as one-half of funds of the bank are invested on mortgage.	Trustees may set apart annually any sum not exceeding one-fifth of the net profits to a reserve fund (which may not exceed 4 per cent. of the total deposits) for the purpose of meeting any loss or deficiency. Appropriations may be made from this fund to meet depreciations in the investments. Trustees may also use the fund for purpose of carrying on business of Bank.	...
To be fixed by Governor.	To be fixed by Governor.	All funds, except such portion as the Treasurer deems sufficient to meet withdrawals, must be invested: (i.) On deposits in any bank in W.A. (ii.) In securities of the Government of W.A. (iii.) In debentures issued by any local authority in W.A. (iv.) Upon first mortgages of any lands in W.A.	The aggregate amount invested on mortgage may not exceed one-third of the total of funds; no more than three-fifths of the amount of valuation may be advanced; and the interest must be not less than 5 per cent.	After payment of interest to depositors and of expenses of maintenance and administration, any surplus income forms part of the Consolidated Revenue Fund.	Deposits are charged upon the Consolidated Revenue Fund. If moneys received are not sufficient to meet the lawful claims of depositors the Governor may authorise the issue of the amount of the deficiency out of the Consolidated Revenue Fund.
To be fixed by Governor.	No interest to be paid in excess of deposits over £250.	All funds not required to meet withdrawals must be invested in Tasmanian Government securities or deposited in a bank in Tasmania.	...	After providing for payment of interest due to depositors the surplus income forms part of the Consolidated Revenue.	Same as in W.A.

Bank for Savings, both under control of Trustees.

4. **Deposits.**—The total amount of deposits in the savings banks of the six States reaches the large sum of nearly sixty-seven million pounds, and would no doubt be even larger if the banks did not restrict interest-bearing deposits to certain limits. It must be remembered that though not granting him facilities to draw cheques, the Australian savings banks practically afford the small tradesman all the advantages of a current account, in addition to which they also allow him interest on his minimum monthly balance, instead of charging him a small fee for keeping his account, as the ordinary banks do. The rates of interest allowed, and the limits of interest-bearing deposits, are as follows:—New South Wales, Government Savings Bank, 3 per cent. up to £500; Savings Bank of New South Wales, 4 per cent. up to £200; Victoria, 3½ per cent. on first £100, and 3 per cent. on excess from £101 to £350; Queensland, 3 per cent. up to £500; South Australia, 2½ per cent. on accounts closed during the year, and 3¼ per cent. up to £250 on accounts remaining open; Western Australia, 3 per cent. up to £1000; Tasmania, Government Savings Bank, 3 per cent. up to £250; Hobart Trustees' Savings Bank, 4 per cent. up to £50, 3½ per cent. on the excess from £50 to £150; Launceston Trustees' Savings Bank, 3½ per cent. up to £150. The savings banks of five of the States—New South Wales (Government Savings Bank), Victoria, Queensland, South Australia, and Western Australia—have, for the further benefit of depositors, entered into a reciprocity arrangement, under which money deposited in one State may be drawn out in another State, and even by telegraph.

The table below shews the total amounts at credit of depositors in each of the last ten years:—

DEPOSITS IN SAVINGS BANKS, 1902-3 to 1911-12.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1902-3 ...	12,425,464	10,341,857	3,772,686	4,187,590	1,988,624	1,194,157	33,910,378
1903-4 ...	12,344,623	10,582,808	3,741,967	4,217,836	2,079,763	1,249,760	34,216,757
1904-5 ...	12,982,648	10,896,741	3,875,197	4,398,041	2,207,286	1,263,542	35,623,465
1905-6 ...	13,963,635	11,764,179	4,142,791	4,766,907	2,316,161	1,332,546	38,286,219
1906-7 ...	15,320,582	12,792,590	4,543,104	5,320,872	2,639,135	1,488,056	42,098,289
1907-8 ...	17,530,157	13,428,676	4,921,881	5,820,344	2,885,463	1,560,951	46,147,472
1908-9 ...	18,805,082	14,101,710	5,158,219	6,347,271	3,059,738	1,605,919	49,077,939
1909-10 ...	20,150,574	15,417,888	5,622,986	6,791,320	3,481,764	1,652,966	53,117,498
1910-11 ...	22,453,924	17,274,423	6,376,969	7,435,772	4,062,504	1,760,090	59,393,682
1911-12 ...	25,361,388	19,662,465	7,342,811	8,248,396	4,408,320	1,933,448	66,956,778

A comparison between the tables shewing the number of depositors and the amount of deposits reveals the fact that the average amounts to the credit of each depositor are considerably larger in some States than in others; in other words, that in one State a comparatively larger proportion of the population makes use of the savings banks, and that the natural result is a smaller amount to the credit of the individual depositor. Within the same State there is little variation in the figures from year to year.

AVERAGE AMOUNT PER DEPOSITOR IN SAVINGS BANKS, 1902-3 to 1911-12.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1902-3 ...	38 8 10	24 14 3	47 2 8	30 10 8	41 8 5	25 14 2	32 3 10
1903-4 ...	37 3 9	24 9 0	46 4 5	29 15 10	37 18 0	26 1 9	31 7 9
1904-5 ...	36 9 9	24 7 2	46 0 10	30 1 0	36 18 8	26 11 2	31 3 4
1905-6 ...	38 7 2	25 4 1	47 1 3	31 5 3	36 8 8	26 5 4	32 5 10
1906-7 ...	39 1 7	26 0 9	48 17 11	32 17 6	39 9 1	27 13 0	33 8 11
1907-8 ...	41 10 11	26 5 0	49 1 2	33 7 11	39 19 6	28 1 4	34 10 10
1908-9 ...	43 11 2	26 9 9	48 7 6	33 17 1	39 7 1	27 12 5	35 4 1
1909-10 ...	43 15 8	27 10 1	49 0 4	33 14 10	40 8 2	27 5 1	35 16 1
1910-11 ...	45 0 7	29 0 3	50 2 6	34 7 0	41 6 7	27 16 0	37 2 4
1911-12 ...	46 12 4	30 12 9	52 15 10	35 8 1	39 13 9	28 16 3	38 11 4

The average amount deposited per head of population shews a satisfactory increase during the period under review. In 1902-3 it ranged from £11 11s. 8d. in South Australia to £6 13s. 1d. in Tasmania, while in 1911-12 the amount in South Australia had risen to £19 8s. 11d. and in Tasmania to £10 3s. 6d. The following table gives the figures for each year:—

SAVINGS BANKS DEPOSITS PER HEAD OF POPULATION, 1902-3 to 1911-12.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1902-3 ...	8 17 3	8 11 2	7 7 4	11 11 8	9 7 7	6 13 1	8 15 0
1903-4 ...	8 13 3	8 15 8	7 4 7	11 13 6	9 5 1	6 16 8	8 14 9
1904-5 ...	8 18 5	9 0 9	7 7 8	12 1 11	9 4 5	6 16 6	8 19 3
1905-6 ...	9 7 8	9 14 5	7 15 11	13 0 0	9 5 2	7 3 0	9 9 10
1906-7 ...	10 1 4	10 9 9	8 8 7	14 7 3	10 6 5	8 0 6	10 5 9
1907-8 ...	11 4 6	10 17 10	9 0 4	15 8 5	11 6 9	8 4 8	11 1 9
1908-9 ...	11 17 5	11 5 6	9 5 2	16 6 0	11 15 8	8 7 6	11 11 11
1909-10 ...	12 9 8	12 1 6	9 14 7	17 2 8	13 2 1	8 11 2	12 5 8
1910-11 ...	13 13 2	13 5 6	10 12 11	18 2 7	14 15 8	9 1 9	13 8 5
1911-12 ...	14 11 7	14 10 5	11 11 8	19 8 11	14 11 7	10 3 6	14 8 4

5. **Annual Business.**—The annual volume of business transacted by the Australian savings banks is very large when compared with the total amount of deposits. This is mainly due to the fact already pointed out of many accounts being used as convenient current accounts. Thus, during the last year of the period under review, the total amount deposited and withdrawn (exclusive of interest added) amounted to about 150 per cent. of the total amount of deposits at the end of the previous year, while the amount at credit of depositors (inclusive of interest added) increased by only 12½ per cent. during the same year. The following table shews the business transacted during the year 1911-12:—

SAVINGS BANKS TRANSACTIONS DURING THE YEAR 1911-12.

State.	Total Deposits at End of Year 1910-11.	Amounts Deposited during Year 1911-12.	Interest Added during Year 1911-12.	Total.	Amounts Withdrawn during Year 1911-12.	Total Deposits at End of Year 1911-12.
	£	£	£	£	£	£
N.S. Wales ...	22,453,924	18,394,208	690,738	41,538,870	16,177,532	25,361,338
Victoria ...	17,274,423	16,858,710	543,242	34,676,375	15,013,910	19,662,465
Queensland ...	6,376,969	4,431,173	185,084	10,993,226	3,650,415	7,342,811
South Australia ...	7,435,772	5,176,258	244,287	12,856,317	4,607,921	8,248,396
West. Australia ...	4,092,504	3,514,008	119,245	7,725,757	3,317,437	4,408,320
Tasmania ...	1,760,090	1,113,956	57,938	2,931,984	998,536	1,933,448
Commonwealth	59,393,682	49,488,313	1,840,534	110,722,529	43,765,751	66,956,778

6. **Classification of Deposits.**—The appended table shews the classification of depositors' balances under the following heads. Sums under £20: sums between £20 and £50: sums between £50 and £100: sums above £100. This classification has been adopted, since it was the only one which would include all the banks making returns under this head. Incomplete as the table is, it throws some light on a question sometimes raised: i.e., to what extent do depositors use a savings bank for the purpose of keeping a current account?

SAVINGS BANKS CLASSIFICATION OF DEPOSITORS' BALANCES.

	Under £20.		From £20 to £50.		From £50 to £100.		Above £100.	
	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.
		£		£		£		
New South Wales ...	351,390	1,290,558	67,040	2,141,763	43,634	3,042,816	82,019	18,886,201
Victoria ...	467,185	1,357,867	65,023	2,091,391	43,647	3,045,381	65,881	13,167,824
Queensland (a) ...	...	...	...	...	...	...	...	...
South Australia ...	123,667	558,779	24,030	765,391	16,276	1,140,479	28,874	5,758,611
Western Australia ...	64,695	236,499	12,224	391,807	7,682	539,262	11,622	3,220,072
Tasmania ...	12,581	52,888	2,613	88,144	1,858	138,512	2,304	350,069
Total (b) ...	1,019,458	3,496,591	170,930	5,478,496	113,097	7,906,450	190,700	41,389,767

(a) Not available. (b) Exclusive of Queensland.

It must be pointed out in using this table that the return for South Australia is exclusive of Penny Savings Banks; the return for Western Australia is exclusive of Penny Savings Banks, and Depositors' Unclaimed Balances; and the return for Tasmania relates to one trustee bank only.

7. Commonwealth Savings Bank.—A most important recent event has been the opening of the Savings Bank department of the Commonwealth Bank. This started operations in Victoria on 15th July, 1912, in Queensland on 16th September, 1912, in the Northern Territory on 21st October, 1912, and in the States of New South Wales, South Australia, and Western Australia on 13th January, 1913. Business is being carried out on the usual Savings Bank lines, interest at the rate of 3 per cent. per annum being allowed on deposits up to £300. Extensive use is being made of the country post-offices as local agencies, the several States having received notice that their Savings Banks would have to be removed from the post-offices by the end of 1912. Victoria and Queensland withdrew at a very early stage.

At the conference of State Premiers, held at Melbourne on 19th January, 1912, and following days, the Commonwealth Prime Minister submitted certain proposals as the basis upon which the States might become partners in the Commonwealth Bank. One of the proposals was that the Commonwealth should take over the Savings Banks of each State, whether Government or trustee. After this had happened the State Government was to have first call on any loan which the Commonwealth Bank should repay to the State Bank in redemption of loans existing when it was taken over; and also first call on three-fourths of the amount of deposits in the State available for investment. The Premiers, feeling unwilling to agree to this, submitted a counter proposal [the Victorian Treasurer dissenting], that the Commonwealth Bank should refrain from embarking on Savings Bank business, and that the States, in consideration thereof, should lend to the Bank an amount equal to one-fourth of the excess of deposits over withdrawals. This arrangement was to come into force on 1st June, 1913, and last for five years. The Prime Minister, in reply, intimated that his original proposals were still open for acceptance. On 23rd January the Premiers' Conference passed the following resolution [the representatives from Victoria and Queensland dissenting]: "that this conference expresses its readiness to accept the proposals submitted by the Prime Minister, subject to a satisfactory arrangement being arrived at for giving the States an equitable share in the management of the Commonwealth Bank." The matter then remained for some months in abeyance.

Almost from the time of the opening of the Savings Bank department the Governor of the Bank made proposals to the various State Governments which might form a basis for the transfer of the various State Savings Banks to the Commonwealth. The Government of Tasmania ultimately accepted the offer, and the State Savings Bank of Tasmania was formally transferred to the Commonwealth as from the 1st January, 1913, and opened for business under the new régime on 3rd January. At the time of writing, the Western Australian Government is engaged in negotiations, which will very possibly result in the transfer of the Western Australian Savings Bank also. The remaining States' Governments have announced their intention of retaining their Savings Banks as separate institutions, and their example has been followed by the Savings Bank of New South Wales, and the two trustee Savings Banks of Tasmania. It will be of interest to give a summary of the agreement between the Commonwealth Bank and the State Savings Bank of Tasmania. The following is condensed from a statement by the Governor of the Commonwealth Bank:—

"The Commonwealth Bank is to take over all the liabilities to depositors, etc., amounting to £788,031, leaving the profit and loss balance, amounting to £5659, in the hands of the State. The assets, amounting to £793,690, are dealt with as follows: the securities to be retained by the State Government, and debentures to be issued to the Commonwealth Bank, Savings Bank Department, in lieu of same. Three per cent. stock totalling £19,000, and $3\frac{1}{2}$ per cent. stock totalling £420,961, to be exchanged for $3\frac{1}{2}$ per cent. debentures at 95, and $3\frac{3}{4}$ per cent. stock amounting to £204,000, and 4 per cent. stock amounting to £146,700 to be exchanged for 4 per cent debentures. The total debentures, amounting to £784,133, will mature in 20 yearly instalments of £39,207 per annum, the first payment to be made on 30th June, 1932. The Government will provide a sinking fund of 1 per cent., to be a charge on the consolidated revenue of the State, and to be deposited in the Commonwealth Bank in reduction of debentures in even thousands, in the proportion of $3\frac{1}{4}$ per cent. and 4 per cent debentures issued. The remaining items on the balance sheet, amounting to £31,229, will be handed over to the Commonwealth Bank as cash."

"The State is to have first call for State requirements on 75 per cent. of the increased deposits at current rates, and should the State at any time not require the amount, the Governor of the Commonwealth Bank will be at liberty to invest the same, either in the business of the Bank, or in the Commonwealth or in municipal securities. The whole of the staff at present exclusively engaged in savings bank business will be retained."

§ 5. Life Assurance.

1. **General.**—Under section 51 of the Commonwealth Constitution Act, the Commonwealth Parliament is empowered to legislate in regard to "insurance, other than State insurance; also State insurance extending beyond the limits of the State concerned." With the exception of Act No. 12 of 1905, "an Act relating to assurance on the lives of children by life assurance companies or societies," no legislation relating to life insurance has been passed by the Commonwealth Parliament, and life insurance companies carry on their business under State laws where such laws are in existence, or otherwise under the provisions of various companies or special Acts. A Royal Commission consisting of the Honourable J. H. Hood, one of the judges of the Supreme Court of Victoria, and G. H. Knibbs, Esquire, Commonwealth Statistician, was, however, appointed in 1908, "to inquire into and report upon the law relating to and the methods of operating, Fire, Life, Industrial, and other Insurance in Australia." The Commission

was originally required to report the result of its inquiry before the 30th June, 1909. A progress report was issued before that date, and the time for the final report extended to the 30th June, 1910. The report relating to Life Assurance was published on 15th March, 1910, and that relating to Fire Insurance on 15th October, 1910. On the conclusions contained in these reports future Commonwealth legislation will probably be based. In fact, a bill embodying some of the conclusions was introduced into the Federal Parliament on December 20th, 1912, but, owing to lack of time, did not reach its second reading. An additional report on Social Insurance was prepared by the Commonwealth Statistician and issued on 9th September, 1910.

Returns for the year 1911 have been directly collected from life assurance societies by the Commonwealth Statistician, with results which are in the main satisfactory. Figures for 1911 refer to business in the Commonwealth only, and do not include New Zealand business.

2. Companies Transacting Business in the Commonwealth.—The total number of companies at present established in the Commonwealth is fifteen, of which the following five have their head offices in New South Wales :—The Australian Mutual Provident Society, the Mutual Life and Citizens' Assurance Company Limited, the City Mutual Life Assurance Society Limited, the Australian Metropolitan Life Assurance Company Limited, and the People's Prudential Assurance Company Limited. The Standard Life Association Limited is now omitted, since a controlling interest in it has been purchased by the Colonial Mutual Life Assurance Society, and almost all its policy-holders have transferred themselves to the latter corporation. The Mutual Life and Citizen's Assurance Company Limited was formed in 1908 by the amalgamation of the Mutual Life Association of Australasia and the Citizens' Life Assurance Company Limited. During 1910 it increased in size by amalgamating with the Australian Widows' Fund Life Assurance Society Limited, which is therefore no longer included in the list of independent corporations. Five companies have their head offices in Victoria, viz.—The Australian Alliance Assurance Company, the National Mutual Life Association of Australasia Limited, the Victoria Life and General Insurance Company, the Colonial Mutual Life Assurance Society Limited, and the Australasian Temperance and General Mutual Life Assurance Society Limited. The head office of the Provident Life Assurance Company is in New Zealand, and that of the Liverpool and London and Globe Insurance Company in England. The remaining three societies belong to the United States, viz.—The Equitable Life Insurance Society of the United States, the Mutual Life Insurance Company of New York, and the New York Life Insurance Company.

Most of the Australian companies are purely mutual ; the Victoria Life and General (which takes no new life business), the Mutual Life and Citizens', the Metropolitan, and the Prudential, are the only companies which are partly proprietary, the shareholders' capital amounting to £40,000, £56,788, £11,740 and £4791 respectively. Of foreign companies transacting business in the Commonwealth, the Liverpool and London and Globe, the Provident, and the Equitable are partly proprietary, the shareholders' capital amounting to £245,640, £10,000 and £20,550 respectively.

3. Ordinary and Industrial Business.—Of the societies enumerated in the preceding paragraph the following five in 1911 transacted both ordinary and industrial business :—The Australian Mutual Provident Society, the Mutual Life and Citizens' Assurance Company Limited, the Australasian Temperance and General Mutual Life Assurance Society Limited, the Australian Metropolitan Life Assurance Company Limited, and the Colonial Mutual Life Assurance Society.

The People's Prudential Assurance Company Limited and the Provident Life Assurance Company formerly restricted their operations to industrial business, but have now established an ordinary department.

The remaining nine societies transacted ordinary life assurance business only, with the exception of those companies which have fire and accident branches, etc.

It has been attempted in this section to keep returns relating to ordinary and to industrial business apart, so far as it is possible to do so, and figures relating to companies whose head offices are in New Zealand or in Europe or America refer to the Australian business only of those companies.

4. Ordinary Business: Australian Business in Force, 1911.—The subjoined table shows the ordinary life business in force at the latest dates available in the fifteen societies conducting operations in the Commonwealth:—

ORDINARY LIFE ASSURANCE.—AUSTRALIAN BUSINESS IN FORCE, 1911.

Society.	Policies in force, exclusive of Annuities.	Amount Assured, exclusive of Bonus Addition, etc.	Annual Premium Income, exclusive of Annuities.
	No.	£	£
Australian Mutual Provident Society	212,795	58,433,603	1,878,249
Mutual Life and Citizens' Assurance Company Limited	93,753	16,074,556	579,059
City Mutual Life Assurance Society	18,629	2,608,228	104,199
Australian Metropolitan Life Assurance Company	2,600	260,161	11,156
Australian Alliance Assurance Company	459	161,284	8,240
National Mutual Life Association of Australasia	68,956	15,087,746	535,555
Victoria Life and General Insurance Company	117	77,240	1,468
Colonial Mutual Life Assurance Society	32,806	6,107,230	194,823
People's Prudential	3,039	162,960	19,962*
Australasian Temperance & General Mutual Life Assurance Society	34,374	3,583,011	136,062
Liverpool and London and Globe Insurance Company (Life Branch)	326	146,663	4,415
Provident Life	119	16,928	497
Equitable Life Assurance Society of United States	6,214	2,133,871	87,840
Mutual Life Insurance Company of New York	4,028	1,561,808	51,065
New York Life Insurance Company	5,673	2,191,551	78,037

* Including industrial.

5. Industrial Business: Australian Business in Force, 1911.—Similar information in regard to the industrial business of the seven societies transacting that kind of business is given in the following table:—

INDUSTRIAL ASSURANCE.—AUSTRALIAN BUSINESS IN FORCE, 1911.

Society.	Policies in Force.	Amount Assured.	Annual Premium Income.
	No.	£	£
Australian Mutual Provident Society	59,996	1,982,141	106,492
Mutual Life and Citizens' Assurance Company	213,105	3,951,551	201,211
Australian Metropolitan Life Assurance Company	18,278	407,774	22,391
Colonial Mutual Life Assurance Society	45,117	1,118,246	51,524
People's Prudential Assurance Company	5,131	105,970	*
Aust. Temperance and General Mutual Life Ass. Society	121,056	2,366,077	142,858
Provident Life Assurance Company	4,559	118,009	5,138

* Included in ordinary.

6. Receipts and Expenditure of Insurance Societies, 1911.—(i.) *Ordinary Business.* The following returns refer to the Australian business of all societies doing business in the Commonwealth. The People's Prudential Assurance Company, whose accounts do

not distinguish between revenue and expenditure on account of ordinary and industrial business, has been included among the companies doing industrial business.

ORDINARY LIFE ASSURANCE.—AUSTRALIAN RECEIPTS AND EXPENDITURE, 1911.

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds).
	£	£	£
Australian Mutual Provident Society ...	2,974,184	1,873,196	1,100,988
Mutual Life and Citizens' Assurance Company ...	829,642	516,381	313,261
City Mutual Life Assurance Society ...	151,337	108,860	42,477
Australian Metropolitan Life Assurance Company ...	12,582	7,863	4,719
Australian Alliance Assurance Company ...	16,061	44,578	28,517*
National Mutual Life Association of Australasia ...	794,456	483,580	310,876
Victoria Life and General Insurance Company ...	9,015	32,972	23,957*
Colonial Mutual Life Assurance Society ...	321,995	226,277	95,718
Aust. Temperance & General Mutual Life Ass. Socy.	166,180	76,290	89,890
Liverpool and London and Globe (Life Branch) ...	4,415	16,338	11,923*
Provident Life ...	497	153	344
Equitable Life Assurance Society ...	114,193	138,281	24,088*
Mutual Life Insurance Company of New York ...	64,927	88,485	23,558*
New York Life Insurance Company ...	83,828	61,090	22,738

* Decrease.

(ii.) *Industrial Business.* A similar return for those societies which transact industrial business is given below. The figures for the Prudential, as stated above, are included therein.

INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN RECEIPTS AND EXPENDITURE, 1911.

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds)
	£	£	£
Australian Mutual Provident Society ...	113,040	57,976	55,064
Mutual Life and Citizens' Assurance Company ...	239,854	157,718	82,136
Australian Metropolitan Life Assurance Company ...	22,946	21,477	1,469
Colonial Mutual ...	51,881	43,911	7,970
People's Prudential Assurance Company ...	21,165	17,735	3,430
Aust. Temperance & General Mutual Life Ass. Soc.	158,687	109,286	49,401
Provident Life Assurance Company ...	5,314	5,162	152

7. *Liabilities and Assets of Insurance Societies, 1911.*—The liabilities of the Australasian societies consist mainly of their assurance funds; as already mentioned, only five of the societies are partly proprietary, viz., the Mutual Life and Citizens', with a paid-up capital of £56,788; the Metropolitan, with a paid-up capital of £11,740; the Prudential, with a paid-up capital of £4791; the Victoria Life and General, with a paid-up capital of £40,000; and the Provident, with a paid-up capital of £10,000. With the exception of the Victoria Life and General, this paid-up capital belongs in every case to the industrial branch of the respective societies. The capital of the Provident (£10,000) is held in New Zealand, that of the Liverpool and London and Globe (£245,640) in England, and that of the Equitable Life (£20,550) in the United States. None of these three amounts appears, therefore, in the two subjoined tables where the capital of the Australian societies is included with the assurance funds. The assets consist mainly of loans on mortgage and policies, Government, municipal, and similar securities, shares, freehold property, etc. As in some cases the Australian liabilities exceed the Australian assets, it

may be pointed out that this table should be taken in connection with the table on page 868, which sets out the total liabilities and assets. Loans on personal security are granted by only very few of the Australian societies.

(i.) *Ordinary Business.* The following table shows the liabilities and assets of the societies transacting ordinary life business:—

ORDINARY LIFE ASSURANCE.—AUSTRALIAN LIABILITIES AND ASSETS, 1911.

Society	Liabilities.			Assets.†		
	Total Funds including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property, etc.	Total
	£	£	£	£	£	£
Australian Mutual Provident Society* ...	23,363,037	292,096	23,655,133	11,999,723	8,824,980	20,824,703
Mutual Life and Citizens' Assurance Co. ...	5,438,314	70,657	5,508,971	2,713,402	3,115,760	5,829,162
City Mutual Life Assurance Society ...	519,235	27,369	546,604	316,817	229,787	546,604
Australian Metropolitan Life Assurance Co.	36,636	6,544	43,180	5,253	37,927	43,180
Australasian Alliance Assurance Company ...	145,424	12,405	157,829	102,172	55,657	157,829
National Mut. Life Assoc. of Australasia ...	5,408,601	83,368	5,491,969	3,779,483	1,712,486	5,491,969
Victoria Life and General Insurance Co. ...	183,540	21,696	205,236	34,459	170,501	204,960
Colonial Mutual Life Assurance Society ...	2,521,507	20,434	2,541,941	1,348,702	1,193,239	2,541,941
Aust. Temp. & Gen. Mut. Life Assur. Soc.*	1,075,382	8,807	1,084,189	470,705	613,484	1,084,189
Liverpool & London & Globe (Life Branch) Provident Life ...	+	+	+	+	+	+
Equitable Life Assurance Society ...	644	...	644	...	237	237
Mutual Life Insurance Society of New York	261,774	22	261,796	149,354	399,644	548,998
New York Life Insurance Society ...	+	+	+	89,691	161,709	251,400
	773,000	5,212	778,212	95,756	31,289	127,045

* Including industrial business. As the business of these two societies is mainly ordinary life business they have been included in this table. † Not available. ‡ Several life offices have a considerable portion of their assets invested outside the Commonwealth (see table on page 868).

(ii.) *Industrial Business.* As stated in the footnote to the preceding table, the Australian Mutual Provident Society and the Australasian Temperance and General Mutual Life Assurance Society, which transact a certain amount of industrial business, but whose business is mainly ordinary life business, have been included with those societies doing only ordinary life business. On the other hand, the People's Prudential Assurance Company, in whose case industrial business greatly predominates over ordinary life business, has been included in the following table. Incomplete as the table is, it shows that the funds appropriated to industrial business are very insignificant in comparison with those pertaining to ordinary life business. Taking the table in conjunction with the statements of revenue and expenditure, the question may well be asked whether in the case of some of the societies industrial business is worth catering for at all.

INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN LIABILITIES AND ASSETS, 1911.

Society.	Liabilities.			Assets.		
	Total Funds, including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property, etc.	Total.
	£	£	£	£	£	£
Mutual Life & Citizens' Assurance Company	873,881	19,830	893,711	605,811	318,051	923,862
Australian Metropolitan Life Assurance Co.	36,113	580	36,693	764	35,929	36,693
Colonial Mutual ...	59,486	39,837	99,323	1,287	97,470	98,757
People's Prudential Assurance Company*	32,998	398	33,396	15,427	17,969	33,396
Provident Life Assurance Company ...	3,267	...	3,267	10	5,525	5,535

* Including ordinary business.

(iii.) *Total Liabilities and Assets.* It has been thought advisable to confine the figures relating to life assurance to business in the Commonwealth. Several of the companies whose head offices are in Australia transact, however, a large amount of business elsewhere, viz., in New Zealand, in South Africa, and in the United Kingdom, while in the case of the foreign companies, the Australian business is insignificant compared with that done elsewhere. Particulars as to this foreign business of both Australian and foreign companies will be found in "Finance Bulletin, No. 6," and a short table only is inserted here, showing the total liabilities and assets (which balance in every case) of the various companies, so that the deficiencies in the Australian assets shewn in the previous tables for those companies doing business elsewhere may not be misunderstood:—

TOTAL LIABILITIES AND ASSETS OF INSURANCE COMPANIES, 1911.

Society.	Liabilities and Assets.	Society.	Liabilities and Assets.
ORDINARY BUSINESS.			
	£		£
*Australian Mutual Provident Soc. ...	28,848,335	Provident Life ...	16,312
Mutual Life and Citizens' Assur. Co. ...	6,789,729	Equitable Life Assurance Society ...	103,944,496
City Mutual Life Assurance Society ...	546,604	Mutual Life Ins. Society of New York ...	120,560,629
Aust. Metropolitan Life Assur. Co. ...	43,180	New York Life Insurance Society ...	140,708,060
Australian Alliance Assurance Co. ...	157,825	INDUSTRIAL BUSINESS.	
National Mutual Life Association ...	6,881,925	Mutual Life and Citizens' Assur. Co. ...	963,532
Victoria Life and General Insur. Co. ...	205,236	Aust. Metropolitan Life Assur. Co. ...	36,693
Colonial Mutual Life Assurance Soc. ...	3,413,873	Colonial Mutual Life Assurance Soc. ...	109,870
*Aust. Temp. & Gen. Mut. Life A. Soc. ...	1,199,148	†People's Prudential Assurance Co. ...	33,396
Liverpool & London & Globe (Life) ...	11,674,284	Provident Life Assurance Company ...	50,866

* Including industrial business.

† Including ordinary business.

§ 6. Fire Insurance.

1. **General.**—Returns as to fire insurance are very defective, and only for Sydney and Melbourne and the country districts of Victoria have some figures been given which are worth reproducing. The Royal Commission mentioned above under "Life Assurance" has reported upon fire insurance matters, and Commonwealth legislation may, therefore, be expected at an early date. Legislation concerning fire insurance was in fact contained in the bill to which reference has already been made. [§ 5, paragraph 1.]

2. **Sydney.**—Under the Fire Brigades Act 1902 the cost of the Metropolitan Fire Brigade is defrayed by equal payments on the part of the Colonial Treasurer, the municipal councils within the area under the jurisdiction of the Fire Brigades Board, and the insurance companies represented in Sydney. The companies divide their share proportionately to the amount held at risk. Under this arrangement the amount payable by the companies for the year 1909 was £19,100, divided amongst sixty-five companies, of which not more than six had their head office in Sydney. The amounts thus held at risk at the close of the last four years for which returns are available were, in 1905, £78,108,749; in 1906, £81,364,129; in 1907, £86,563,304; and in 1908, £89,071,992. A new Act, which came into force on the 1st January, 1910, was passed in 1909. This Act substituted a Board of Fire Commissioners for New South Wales for the original Metropolitan Fire Brigades Board, and divides the whole State into eight fire districts for the greater facilitation of working.

3. **Melbourne.**—In Melbourne the Metropolitan Fire Brigades Board assesses the amount payable by the insurance companies on the amount of premiums returned. These premiums for the last four years averaged about £350,000 per annum, while

the contributions paid by the companies amounted to about £18,000, or about £5 for every £100 of premiums. It may be said, therefore, that the companies have to devote about 5 per cent. of their premium income from metropolitan insurances to the maintenance of the fire brigade.

The annual value of ratable property is nearly £5,650,000, and the amounts contributed by the municipalities—as in the case of the insurance companies, one-third of the amount required by the Fire Brigades Board, the remaining one-third being contributed by the State Treasurer—are equal to about $\frac{1}{3}$ d. per £1 of ratable value. In addition to this contribution, insurance companies doing business in Victoria have to take out an annual license at a cost of $1\frac{1}{2}$ per cent. of the gross premium income, which is probably equal to about $1\frac{1}{3}$ per cent. on net income.

4. Country Districts of Victoria.—The country districts are divided into nine areas for fire insurance purposes, and the contributions to be paid vary in these areas according to the actual requirements of the Country Fire Brigades Board. The annual values of ratable property for the last four years were slightly over £1,500,000. The premium income of the insurance companies from country business during the year 1912 was about £182,000, and the contributions of the companies £4700, equal to about $2\frac{1}{2}$ per cent. of the premium income.

5. Brisbane.—A similar arrangement holds good in Brisbane, under which the cost of the Fire Brigade Board, amounting to about £6000 per annum, is paid in equal shares by the Government, the Brisbane City Council, and the insurance companies.

6. Adelaide.—The Fire Brigades Board of South Australia is incorporated under "The Fire Brigades Act 1904"; "The Fire Brigades Act Amendment Act 1905"; and "The Fire Brigades Act Further Amendment Act 1910." The cost is distributed as follows:—Three-ninths to the Government; four-ninths to the insurance companies; and two-ninths to the municipalities and districts which come under the operations of the board. The insurance companies are assessed in proportion to that portion of their premium incomes derived from the insurance of property (re-insurance within the State excepted) situated within the limits of the municipalities and districts coming under the operations of the board. The respective contributions for 1911 were as follows:—The Government, £6942; the companies, £9256; the municipalities, £4628.

7. Perth.—A District Fire Brigades Bill was reported on by a committee of the Legislative Assembly during 1909, and it was recommended that all brigades should in future be controlled by one board, and that the expense should be met by contributions at the following rate:—By Government, two-eighths; by the municipalities, three-eighths; and by the insurance companies, three-eighths. These provisions were incorporated in an Act, "The District Fire Brigades Act 1909," which was assented to on 21st December, 1909, and came into force on the 1st day of January, 1910. This Act, however, does not apply to Perth or the other districts in which the Fire Brigades Act 1898 is still operative. According to the provisions of the latter Act the expenditure is allocated as follows:—One-ninth to the Government; four-ninths to the insurance companies; and four-ninths to the municipalities. It is provided that the Governor may, at any time, on the petition of the council of any municipality, declare by proclamation that the provisions of the Act of 1898 shall cease to be in force in that municipal district.

8. Australian Fire Insurance Business.—Returns are available shewing the revenue and expenditure, assets and liabilities, and investments of eighteen insurance companies having their head offices either in the Commonwealth or in New Zealand. These companies are:—(a) with head-office in Sydney—the Australian Mutual Fire Insurance Company, the City Mutual Fire Insurance Company, the Mercantile Mutual Fire Insurance Company, the Queensland Insurance Company Limited, the United Insurance

Company, and the Insurance Office of Australia Limited; (b) with head-office in Melbourne—the Australian Alliance Assurance Company, the Colonial Mutual Fire Insurance Company, the Commonwealth Insurance Company Limited, the Victoria Insurance Company, and the Victoria General Insurance and Guarantee Company Limited; (c) with head-office in Hobart—the Derwent and Tamar Fire and Marine Assurance Company Limited; (d) with head-office in Launceston—the Mutual Fire Insurance Company of Tasmania; (e) with head-office in Auckland—the New Zealand Insurance Company, and the South British Fire and Marine Insurance Company of New Zealand; (f) with head-office in Dunedin—the National Fire and Marine Insurance Company of New Zealand, and the Standard Fire and Marine Insurance Company of New Zealand; (g) with head-office in Wellington—the New Zealand State Fire Insurance office; and (h) with head-office in Christchurch—the Farmers' Co-operative Insurance Association of New Zealand. As their names imply, the majority of these companies transact marine insurance and in some cases guarantee and other business in addition to fire insurance business, and the returns relating to the latter cannot be separated from the former.

The accounts cover two periods of one year, the second year ending at various dates from 30th June, 1911, to 31st March, 1912. The figures for the first year are put in brackets.

The premiums, less reinsurances and returns, amounted to £2,088,120 (£1,861,915), losses were £1,029,801 (£1,018,987). Expenses and commission came to £725,806 (£624,540), and there was, therefore, a profit on trade operations of £332,513 (£218,388). As, however, interest, rent, fees, etc., amounted to £176,172 (£152,214), the total profit was £508,685 (£370,602). Dividends and bonuses came to £241,777 (£198,476). The ratio to premium income of losses was, therefore, 49.32 per cent. (54.73 per cent.), and of expenses and commissions, 34.76 per cent. (33.54 per cent.). The resulting ratio of trade surplus to premium income was 15.92 per cent. (11.73 per cent.).

The paid-up capital of the sixteen companies was £1,575,036 (£1,310,347); reserve and reinsurance funds, £2,375,255 (£2,176,027); undivided profits, £201,718 (£177,781). The total paid-up capital and reserves were, therefore, £4,152,009 (£3,664,155). In addition to these liabilities there were others, viz.:—Unsettled losses, £225,402 (£191,918); sundry creditors, £230,141 (£155,918); dividend to pay, £135,920 (£125,887); and, in the case of one company, a life assurance fund, £141,591 (£170,109), thus bringing the total liabilities to shareholders and to the general public up to £4,885,063 (£4,307,987).

The corresponding amount of assets is made up of investments, £4,324,017 (£3,738,341), viz.:—Loans on mortgage, £1,272,841 (£1,141,440); Government securities, debentures, shares, etc., £1,140,732 (£1,038,897); landed and other property, including furniture, £891,968 (£799,123); fixed deposits, £916,178 (£652,935); in the case of one company doing a mixed business—loans on its own life policies, etc., £11,654 (£14,055); other investments, £90,644 (£91,891). The balance of assets consisted of cash in bank, on hand, and bills receivable, £217,876 (£176,438); and sundry debtors, etc., £343,170 (£357,100).

The financial position of the companies is undoubtedly a strong one, owing to the steady accumulation of reserves, and the high ratio borne by capital and reserves to premium income must be a cause of satisfaction to policyholders.

§ 7. Marine Insurance.

No returns are available in regard to Marine Insurance. It may, however, be stated that the Commonwealth Parliament in 1909 passed an Act (No. 11 of 1909, "An Act relating to Marine Insurance") which was assented to on the 11th November, 1909. This

Act materially alters some of the conditions under which marine policies have heretofore been issued.

§ 8. Friendly Societies.

1. **General.**—Friendly societies are an important factor in the social life of the community, as probably nearly one-third of the total population of the Commonwealth comes either directly or indirectly under their influence. Their total membership is about 400,000, but as certain benefits, such as medical attendance and free medicine and in many cases funeral expenses, are granted to members' families as well as to members themselves, this figure must, even when due allowance is made for young and unmarried members, be multiplied by four at the least to arrive at the total number of persons more or less connected with these societies. Legislation has conferred certain privileges on friendly societies, but, on the other hand, it insists on their registration, and it is the duty of the Registrars in the various States, prior to registering a new society, to see that its rules are conformable to the law, and that the scale of contributions is sufficiently high to enable the promised benefits to be conferred on members. Societies are obliged to forward annual returns as to their membership and their finances to the Registrar, and elaborate reports are published in most of the States dealing with the returns thus received.

In the following tables the figures refer to the year 1911, except those for South Australia, which refer to the quinquennium 1905-9.

2. **Number of Societies, Lodges, and Members.**—The total number of societies registered in New South Wales is 66; in Victoria, 48; in Queensland, 16; in South Australia, 16; in Western Australia, 16; and in Tasmania, 11. No total is given of these figures for the Commonwealth, as the societies shewn in one State are in most cases represented in all the other States. The number of different lodges, the total number of benefit members at the end of the year, and their average number during the year are shewn in the following table:—

FRIENDLY SOCIETIES.—LODGES AND MEMBERS, 31st DECEMBER, 1911.*

State.	Number of Lodges.	Benefit Members at End of Year.	Average No. of Benefit Members during Year.
New South Wales	1,769	146,636	138,521
Victoria ...	1,498	148,603	145,439
Queensland ...	513	45,190	43,755
South Australia ...	529	58,292	†
Western Australia ...	269	17,637	17,017
Tasmania ...	180	21,708	†
Commonwealth ...	4,758	488,066	†

* See, however, paragraph 1, above.

† Not available.

3. **Sickness and Death.**—Sick pay is generally granted for a number of months at full rates, then for a period at half rates, and in some societies is finally reduced to quarter rates. The following table shews the total number of members who received sick pay during the year, the number of weeks for which they received pay in the

aggregate, and the average per member sick, and further the number of benefit members who died during the year, together with the proportion of deaths per thousand average members :—

FRIENDLY SOCIETIES.—SICKNESS AND DEATH, 1911.*

State.	Number of Members who received Sick Pay.	Total Number of weeks Sick Pay granted.	Average No. of weeks per Member sick.	Deaths of Benefit Members and Wives.	Proportion of Deaths to 1000 average Benefit Members.
New South Wales	32,282	192,422	5.96	1,071	7.73
Victoria ...	27,695	214,310	7.74	1,689	11.61
Queensland ...	9,230	47,511	5.15	294	6.72
South Australia ...	8,971	86,768	9.67	497	†
Western Australia	2,645	14,190	5.36	143	8.40
Tasmania ...	4,161	24,593	5.91	159	†
Commonwealth	84,984	579,794	6.82	3,853	†

* See, however, paragraph 1. † Not available.

4. **Revenue and Expenditure.**—The financial returns are not prepared in the same way in each State, but an attempt has been made in the subjoined table to group the revenue under the main headings :—

FRIENDLY SOCIETIES.—REVENUES, 1911.*

State.	Entrance Fees. Members' Contributions, and Levies.	Interest, Dividends, and Rents.	All other Income.	Total Revenue.
	£	£	£	£
New South Wales ...	412,933	64,261	38,043	515,237
Victoria ...	422,039	88,605	48,941	559,585
Queensland ...	148,366	22,267	...	170,633
South Australia ...	†130,096	31,167	†65,293	226,556
Western Australia ...	49,591	9,146	28,681	87,418
Tasmania ...	54,925	6,788	11,790	73,503
Commonwealth ...	1,217,950	222,234	192,748	1,632,932

* See, however, paragraph 1. † Excluding levies. ‡ Including levies.

The returns relating to expenditure are more complete than those relating to revenue, and can be shewn in full for every State. The figures shew that the excess of revenue, amounting in the aggregate to £319,680, was divided amongst the six States as follows :—New South Wales, £86,653; Victoria, £123,794; Queensland, £46,445; South Australia, £37,588; Western Australia, £16,237; and Tasmania, £8963. The revenue exceeded the expenditure by about fifteen shillings and tenpence per average benefit member, a margin which cannot be called very large.

FRIENDLY SOCIETIES.—EXPENDITURE, 1911.*

State.	Sick Pay.	Medical Attendance and Medicine.	Sums Paid at Death of Members & Members' Wives.	Administration.	All other Expenditure.	Total Expenditure.
	£	£	£	£	£	£
New South Wales	148,576	143,040	31,838	59,141	45,989	428,584
Victoria ...	146,866	146,303	29,378	70,023	43,221	435,791
Queensland ...	36,106	50,377	12,211	25,494	†	124,188
South Australia ...	50,979	28,305	22,998	24,526	62,160	188,968
Western Australia	11,742	17,058	2,440	12,839	27,102	71,181
Tasmania ...	19,821	18,210	9,950	10,739	5,820	64,540
Commonwealth	414,090	403,293	108,815	202,762	184,292	1,313,252

* See, however, paragraph 1. † Included in "Administration."

It appears from the above figures that sick pay averaged about fourteen shillings and threepence per week, but, as the returns include pay at half and quarter rates, and as the proportion of these to full rates is not stated, the average given must be taken for what it is worth. Medical attendance and medicine came to about one pound and eight-pence per average benefit member, or to nearly £4 15s. per member who received sick pay during the year. Funeral expenses averaged £27 1s. 11d. per death of a member or wife of a member during the year, but this average also must be taken for what it is worth, as the funeral expenses allowed in the case of the death of a member are generally much higher than those allowed in the case of the death of a member's wife.

5. **Funds.**—The two foregoing tables shew that the surplus of revenue over expenditure amounted to £319,680 for the year, and a small surplus must, of course, result annually in every society which levies adequate contributions to enable it to meet all possible claims. These accumulations of profits are generally invested, and the subjoined table shews for all of the six States the division into invested and uninvested funds :—

FRIENDLY SOCIETIES.—FUNDS, 31st DECEMBER, 1911.*

State.	Invested Funds.	Uninvested Funds.	Total Funds.
	£	£	£
New South Wales ...	1,416,068	90,280	1,506,348
Victoria ...	2,134,175	112,221	2,246,396
Queensland ...	552,344	26,011	578,355
South Australia ...	887,318	35,287	922,605
Western Australia ...	164,732	9,782	174,514
Tasmania ...	195,465	11,825	207,290
Commonwealth ...	5,350,102	285,406	5,635,508

* See, however, paragraph 1.

* The total funds amounted, therefore, to £12 17s. 3d. per member at the close of the year under review.

§ 9. Probates.

1. Number of Probates and Letters of Administration and Value of Estates.—

The value of the estates left by deceased persons gives a fair view of the distribution of property among the general population. There occurred in 1911 the deaths of 33,835 adult persons, while the total number of probates and letters of administration granted during the same period was 10,972. It would therefore appear that about one in every three adults who died during the year was possessed of sufficient property to necessitate the taking out of probate. The details for each State are shown in the table hereunder:—

PROBATES AND LETTERS OF ADMINISTRATION, 1911.

State	Number of Estates.			Value of Estates.		
	Probates.	Letters of Administration.	Total.	Probate.	Letters of Administration.	Total.
New South Wales	2,421	1,168	3,589	£ 12,257,228	£ 880,840	£ 13,138,068
Victoria	3,181	1,433	4,614	8,469,163	*	8,469,163
Queensland	500	229	729	2,111,364	298,131	2,409,495
South Australia	854	203	1,057	2,729,829	125,260	2,855,089
Western Australia	344	240	584	703,663	140,488	844,151
Tasmania	335	64	399	555,634	41,236	596,870
Commonwealth	7,635	3,337	10,972	26,826,881	1,485,955	28,312,836

* Included with Probates.

Intestate estates to the value of £146,227 were placed under the control of the Curator during the year, and £21,526 unclaimed money paid into Consolidated Revenue. The details for each State are shewn hereunder:—

INTESTATE ESTATES, 1911.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	O'wlth.
Intestate estates placed under control of Curator during 1911							
Number	656	368	623	127	300	88	2,162
Value	£ 46,293	29,831	43,328	19,598	*	7,177	146,227
Unclaimed money paid into consolidated revenue by Curator during 1911	£ 7,921	7,031	4,361	539	1,094	580	21,526

* Not available. + Exclusive of Western Australia.

This would make the average value of each estate £2580, and the average value of property left by each adult who died in 1911, £837.

SECTION XXII.

PUBLIC INSTRUCTION.

§ 1. Evolution of Educational Systems in Australia.

1. **Educational Systems of the States.**—(i.) *Place of New South Wales in Australian Education.* The first settlement in Australia being in New South Wales, it is but natural that Australian education should have had its beginning in that State. In the evolution of educational method and system in Australia, New South Wales also has played a leading part, and has had practically a dominating influence. For that reason an account of the evolution of education in this State contains, as it were, the key to the understanding of the Australian attitude to this question. The subject is dealt with in some detail in No. I. and No. II. issues of the Commonwealth Official Year Book, but it is not proposed to repeat it in the present volume.

(ii.) *Educational Systems of other Commonwealth States.*—(a) *General.* A more or less detailed account of the origin and development of the primary educational systems of the other States also appears in No. I. and No. II. issues of the Year Book.

(b) *Recent Development in State Educational Systems.*—(i.) *New South Wales.* Amongst the more important developments in this State may be mentioned the new scheme of secondary education, which came into operation in 1911, and which provides for courses of study extending over four years, for new conditions of entrance, and for the abolition of fees in the Public High Schools. The courses of study are designed to furnish a preparation for various types of vocation, and have been arranged in four groups:—(1) General course leading to the professional studies of higher institutions; (2) a commercial course; (3) a technical course, and (4) a domestic course.

The regulations provide for certificates marking three definite stages in the course—(a) the “qualifying” certificate, shewing that the holder has completed the primary course; (b) the “intermediate” certificate, marking the end of the first two years of High School course; and (c) the “leaving” certificate, indicating the successful graduation through the whole course and the passing of the prescribed final examination. Arrangements have been made with the University authorities for the acceptance of the leaving certificate in lieu of the matriculation examination.

(ii.) *Victoria.* Under the Amending Education Act of 1910 it is provided that every child must attend school for the full period of eight years between 6 and 14, unless he be given a certificate of education at 13. The schools are open on an average 225 days in each year, and require attendance on all these days, unless reasonable excuse is forthcoming. Provision is made for the mentally deficient. After completion of the elementary school course, the pupil may go on to the evening continuation schools, higher elementary schools, district high schools, or the trade schools. A Council of Public Education has been appointed to advise on educational matters generally, and particularly in regard to co-ordination.

(iii.) *Queensland.* The Amending Act of 1910 introduced several new features into the educational system of Queensland, chief amongst them being—(a) employment of proceeds of sales of land and other school property for school purposes, instead of being paid into Consolidated Revenue; (b) abolition of local contributions; (c) provision of

scheme of school certificates to assist in co-ordination of various branches of the system; (d) establishment of compulsory continuation classes; (e) compulsory medical and dental examination; (f) raising the compulsory age to 14 years instead of 12 years; (g) provision for compulsory attendance on every day on which the school is open.

(iv.) *South Australia.* One of the chief events in educational development in South Australia in 1911 was the provision of evening continuation schools, intended to help those who cannot afford to attend the higher day schools. It is proposed also to fall into line with the other States in the matter of medical supervision of school children, and provision has been made for the appointment of a medical officer, a dental officer, and two trained nurses. The changes introduced at the teachers' training college have proved very satisfactory, and the academic teaching at the University is now supplemented by systematic pedagogic instruction for all classes of teachers.

(v.) *Western Australia.* The most important educational event in this State during 1911 was the opening of a Modern School, designed to give a four years' course of training to children from about 13 years of age, the work being specialised in the last two years to meet future needs. Continuation schools were established in 14 different centres, and attended by 1000 pupils. Provision was also made for more complete medical inspection of State School pupils.

(vi.) *Tasmania.* During 1911 special efforts were made to secure a higher standard of education by the issue of new courses of instruction and provision for advanced work in the highest classes. In regard to training of teachers, special attention has been given to the revision of infant school methods. The work of medical inspection has been extended by the appointment of two trained nurses.

(vii.) *Present Position of State Education in Australia.* Throughout Australia primary education is compulsory and free, while there exists in most of the States a liberal provision of scholarships and bursaries to the Higher State Schools, to the Secondary Schools, and to the Universities.¹ Provided that the requisite standard is reached, it is of course permissible for children to receive home tuition, or to attend so-called private schools. Considerable interest is taken in educational matters by the people of the Commonwealth, and within the last few years several of the States have sent qualified representatives to inspect and report on the methods adopted in the chief countries of Europe and America. The reports of these Commissioners, especially those of New South Wales, have been widely studied, and various improvements have been made in accordance with their recommendations. The orientation, lighting, and ventilation of school buildings are being modernised. In all of the States periodical medical inspection of the children is in force. (A detailed statement of the work being done in this direction will be found in the chapter dealing with Public Hygiene.) Methods of training teachers are now better developed, and although the "pupil teacher" system and its effects have not been wholly eliminated, it appears to be gradually vanishing. The methods adopted in the various States for the selection and training of teachers are described in some detail in § 2, par. 10, hereinafter. There has been a wider employment of kindergarten principles in the early stages, and the more or less purely abstract teaching of the older days has been largely replaced by concrete methods. Such subjects as nature study, manual training, music, and drawing have received a general impetus. Greater attention has been given to the scientific classification of pupils. Moreover, as will be seen from (ii. b) above and (7) hereafter, the State Education Departments are increasing their activities in the direction of Secondary Education. Lastly, the system of inspec-

1. Universities have been in existence for some time in New South Wales, Victoria, South Australia, and Tasmania. The University of Queensland was opened in March, 1911, and a University will shortly be founded in Western Australia.

tion has been considerably remodelled. Under the old system, the inspector was little more than an examining officer, but, under the present régime, the primary duty of these officers consists in guiding and directing the teaching in accordance with approved methods.

(viii.) *Co-ordination of Educational Activities.* Although as pointed out in (vii.) the primary systems may be considered as fairly well organised, there is still need for a more effective co-ordination of the entire educational activities of the States. At the present time, the brighter pupils from the State Schools may, through the medium of an excellent scheme of scholarships and bursaries, gain entrance to the Secondary Schools and to the Universities, but the average boy or girl simply leaves the State School at the age of fourteen or thereabouts, and in most cases the State no longer concerns itself with their further educational advancement. A small proportion attends evening schools or technical classes, others persevere in private study, but many make no further attempt at progress. The natural disadvantage of this condition of affairs has been recognised, and efforts have been made to meet it by providing higher State schools, evening schools, extending the facilities for technical instruction, arranging for University extension lectures, etc. It may be noted further, that, while the bulk of the primary education and the whole of the University education is under the control of the State, intermediate secondary education is still largely in private hands. There are, of course, some excellent State Higher Schools, together with semi-private subsidised Grammar Schools, but a fully co-ordinated scheme of public education has yet to be created. The various Departments of Public Instruction are virtually departments controlling primary education, though they are associated more or less with the Universities and with technical education. In some of the States, attention has recently been devoted to the question of State control of the entire educational activity of the community, but the project is naturally regarded with disfavour by the private school authorities.

§ 2. State Schools.

1. **Introductory.**—The State Schools, or, as they are sometimes termed, the “public” schools, of the Commonwealth comprise all schools directly under State control, in contradistinction to the so-called “private” schools, the bulk of which, though privately managed, nevertheless cater for all classes of the community.

2. **Enrolment and Attendance.**—The following table shows the number of State Schools, together with the teachers employed and the enrolment and “average attendance” in each State during the year 1911:—

STATE SCHOOLS, TEACHERS, AND SCHOLARS, 1911.

(COMMONWEALTH).

State.	Schools.	Teachers.*	Scholars Enrolled.	Average Attendance.
New South Wales	3,125	5,980	223,603	160,776
Victoria	2,061	5,155	204,086	146,464
Queensland	1,232	2,733	91,624	70,194
South Australia	736	1,241	55,662	38,727
Western Australia	495	1,043	34,969	29,448
Tasmania	381	816	28,821	18,130
Northern Territory	3	3	85	60
Commonwealth	8,033	16,971	638,850	463,799

* Exclusive of sewing mistresses.

Unfortunately, the schemes of enrolment and of the computation of "average attendance" are not identical in each State, so that the comparisons are imperfect. The average attendance at High Schools in South Australia is not recorded, and the necessary figures were obtained by an estimate based on enrolment. That the educational statistics of each State of the Commonwealth should be made up in the same way is much to be desired.

The enrolment and average attendance at the State Schools in the Commonwealth are given below for the years 1891, 1901, and for each year of the period 1907 to 1911:—

ENROLMENT AND ATTENDANCE AT STATE SCHOOLS, 1891 to 1911.
(COMMONWEALTH.)

Year.	Total Population. ¹	Enrolment.	Average Attendance.	Year.	Total Population. ¹	Enrolment.	Average Attendance.
1891	3,240	561,153	350,773	1909	4,323	624,236	458,260
1901	3,824	638,478	450,246	1910	4,425	627,910	455,870
1907	4,161	611,990	444,001	1911	4,569	638,850	463,799
1908	4,232	618,836	446,146				

1. In thousands.

It will be seen from the above table that, despite the increase of population, the official figures of enrolment and average attendance at the State Schools of the Commonwealth shew unsatisfactory results, although an upward tendency is evident in the figures for 1909 and 1911. An examination of the graphs on pages 252 to 254, shewing birth-rate, will make it apparent that this is at least in part due to the diminished birth-rate of past years.

Schools in the Federal Capital Area. During the year 1911 fourteen State Schools were in operation in the Federal Capital Territory (Yass-Canberra). The pupils enrolled numbered 304 and the average attendance 183. Cost of upkeep in 1911 amounted to £1593.

3. Centralisation of Schools.—The question of centralisation of schools adopted so successfully in America has received some attention in the Commonwealth, and particularly in New South Wales. It is recognised that a single adequately-staffed and well-equipped central institution can give more efficient teaching than a congeries of small scattered schools in the hands of less-highly trained teachers, and the small schools in some districts were therefore closed and the children conveyed to the central institution. The principle was first adopted in New South Wales in 1904, when the conveyance of pupils was authorised in the case of twelve schools. In 1911 subsidy was paid for conveyance to eighty schools.

4. Education in Sparsely-settled Districts.—It has always been the aim of the State to carry the benefits of education into the remotest and most sparsely-settled districts. This is effected in various ways. (i.) By the establishment of Provisional Schools, *i.e.*, small schools in which the attendance does not amount to more than about a dozen pupils, these institutions merging into the ordinary public school list when the attendance exceeds the minimum. (ii.) When there are not enough children to form a provisional school what are known as Half-time Schools are formed, the teacher visiting them on alternate days. In still more sparsely-peopled districts an itinerant teacher goes from house to house within a certain radius. Thus in Queensland during 1911 the sixteen itinerant teachers covered 525,100 square miles of country and travelled 51,859 miles. In this State also the Education Department has established what are known as Saturday Schools in which small groups of children in outlying districts are visited by the nearest

teacher on Saturdays and receive the benefit of several hours' instruction. These schools, of which there are now ten, have been warmly welcomed in the districts in which they are established, inasmuch as under this system the children "outback" receive a greater amount of instruction than is possible under the system of itinerant teachers. During 1911 the Education Department in Western Australia disbursed over £1800 in "driving grants," *i.e.*, sums of money granted to parents whose homes are over three miles from the nearest school, and who arrange to have their children driven in. In New South Wales and Western Australia parents in the thinly-peopled areas are also allowed to club together and build a school, which receives aid from the Government in the form of a yearly subsidy and grant of school material. (iii.) An experiment on the part of New South Wales, the result of which was awaited with some interest, was the establishment in 1908 of a "travelling" school. A van was provided in which the teacher travelled, carrying with him a tent for himself and one to be used as a school, together with such books and apparatus as are required in a primary school. So far very satisfactory results have been attained. (iv.) There are also railway camp schools in operation on the sites of extensive railway works.

5. Evening Schools.—Evening Public Schools have been in existence for many years in some of the States, but their progress has been uncertain. In New South Wales there were during 1911, 16 evening primary schools with an average attendance of 343; Victoria had eight schools with enrolment of 978 and an average attendance of 293; Queensland had evening continuation classes attended by 54 pupils; and Western Australia had continuation classes in 14 centres, attended by about 1000 pupils. Up to the end of 1910 the evening schools in New South Wales aimed chiefly at giving primary instruction, but in October of that year evening continuation schools of two types were established—(i.) Artisan Schools for boys learning trades; and (ii.) Commercial Schools for boys starting in business. In June 1912 there were twenty-one schools in operation in the metropolitan district, and fourteen (ten of which are artisan schools) in the country districts. Evening Continuation Schools have been established under regulation in South Australia, and are intended principally to help the working boy to improve his general education and to add to the store of knowledge most useful in his present work. Classes are now established in thirteen centres with an enrolment of 247 students.

6. Higher State Schools.—(i.) In *New South Wales* public schools, which provide advanced courses of instruction for two years for pupils who have completed the primary course, are classed as *Superior Schools*. There were 145 of these schools in existence at the end of 1911, with an enrolment of about 92,000 scholars. Provision has also been made for the more advanced education of children in country centres by the establishment of twenty-eight district schools. These schools are specially staffed, and undertake the work of preparing students for admission to the training colleges. There are also ten *High Schools* in the State—five for boys and five for girls. These had an enrolment in 1911 of 1865 pupils, with an average attendance of 1787. From the beginning of 1911 the upper sections of the girls' and boys' schools at Fort Street have been graded as *High Schools*. In order to provide teachers of agriculture, provision is made for ten teacher-students annually to attend the second year's training at the Hawkesbury Agricultural College.

The Sydney Grammar School (not a "State" School in the ordinary acceptance of the term), which receives a State endowment of £1500 a year, had in 1911 a quarterly enrolment of 584 pupils, and an average attendance of 553.

(ii.) In *Victoria*, the schools hitherto known as "*Continuation Schools*" have been proclaimed as *District High Schools*, and are not now restricted to candidates for the teaching service and the holders of scholarships. Pupils possessing the certificate of merit may be enrolled at District High Schools and at Agricultural High Schools at the age of twelve years, but they cannot be appointed as junior teachers until they have reached the age of sixteen years. There are District High Schools at Bairnsdale,

Bendigo, Castlemaine, Echuca, Geelong, Horsham, Kyneton, Melbourne, Maryborough and Stawell, and Agricultural High Schools at Ballarat, Colac, Leongatha, Mansfield, Mildura, Sale, Shepparton, Wangaratta, Warragul and Warrnambool. The enrolment at these schools in 1911 was 1738, of whom 829 were boys and 909 girls.

(iii.) Prior to the year 1911, *Queensland* did not possess any distinctly secondary schools under State control, but in February of that year High Schools were opened at Warwick, Gympie, Bundaberg, Mount Morgan, Mackay, and Charters Towers. Tuition at these schools is free, but students must pass a qualifying entrance examination. The enrolment in 1911 amounted to 610. In smaller centres it is intended to provide extra tuition at existing State schools where the attendance warrants it. There are, moreover, ten Grammar Schools—six for boys and four for girls, each of which is subsidised by the State to the extent of £750 per annum, and in addition receives a payment of £250 per annum for providing district scholarships. These scholarships, fifty in number, are granted to State School pupils. The enrolment at the Grammar Schools in 1911 was 1304, and the average attendance 1146. Since the year 1909 these schools have been regularly examined by the Inspector-General of the Education Department. The Government is considering the advisableness of merging these schools with its own scheme of secondary education.

(iv.) *South Australia*. Including the Adelaide High Schools, there were altogether nineteen District High Schools open in South Australia in 1911, with an enrolment of 2168 students, and a teaching staff of 80. In addition to giving secondary education, these institutions form a valuable source from which the Department can draw a supply of young teachers.

(v.) *Western Australia*. A Modern School designed to give a four years' course to pupils admitted at about the age of 13 years was opened in Perth early in 1911. The first two years of the course are to a large extent common to all, but in the final two years specialisation is aimed at, in order to meet the needs of future University students, teachers, agriculturists, scientific and business men; and, in the case of girls, to give tuition in domestic economy to those desirous of it. At the opening of the school there were 226 students, but when the additional buildings are completed there will be accommodation for 400. During 1909 the upper classes of schools in the largest centres of population were brought together into central schools, in order to secure more economical and effective teaching, and it is intended that these central institutions shall form the nucleus of future High Schools. Continuation classes were inaugurated in 14 centres in 1911, and were attended by nearly 1000 pupils. The classes are intended to provide some measure of higher education to those who leave school as soon as they reach the compulsory age of 14 years. Admission to these classes is free, but pupils must attend regularly three evenings a week. Evening Schools are held in various parts of the State, but the work carried on is mainly primary. The Perth High School for boys is subsidised by the State to the extent of £1000 annually.

(vi.) *Tasmania*. No direct provision has hitherto been made by Tasmania for public education of a standard intermediate between that of a State School and the University, but an increasing number of pupils are prepared in the ordinary State Schools for the Junior Public Examination of the University. It is intended to encourage this work in future, and the scheme of scholarships, which was discontinued for many years, has recently been revived. For a period of thirty years, from 1860 to 1890, there was in force in Tasmania a system under which the State, without actually providing educational agencies, did much to foster education within the range of the generally accepted High School curriculum, for the Council of Education during this period conducted public examinations of various grades, at which scholarships for juniors to "superior" schools were awarded, as well as exhibitions to British Universities. The Council also granted the degree of "Associate of Arts" in imitation of the similar Oxford title. Later on the Council of Education evolved and expanded into the University of Tasmania.

7. Agricultural Training in State Schools.—The question of agricultural training in ordinary schools has received considerable attention in *New South Wales*. In 1905 a teacher of school agriculture was appointed to visit schools and districts for the purpose of giving instruction to teachers and scholars in the subject, the officer selected possessing the dual qualifications of a thorough acquaintance with agricultural work and school methods. The Education Department makes grants of seeds of various kinds to the schools having gardens, and in some instances has installed windmill plants to provide an adequate water supply. Under the direction of a capable head master, a college has also been opened at Hurlstone, near Sydney, at which practical lessons are given in elementary agriculture, and the institution also serves as a stepping-stone to the Hawkesbury Agricultural College. The Department has also organised Rural Camp Schools for the purpose of giving teachers and scholars first-hand knowledge of country industries. Schools of this nature were held in 1911 at Richmond, Morpeth, and Mudgee, the total attendance for the year being 2073.

The subject of Agricultural Colleges and Experimental Farms is dealt with in the section relating to Agriculture. (See page 412.)

In *Victoria* what are termed Agricultural High Schools have been established at Ballarat, Colac, Leongatha, Mansfield, Mildura, Sale, Shepparton, Wangaratta, Warra-gul, and Warrnambool. Pupils must be at least fourteen years of age, and have passed beyond the curriculum of the elementary school, or else be able to afford satisfactory proof that they are qualified to profit by the instruction offered. The schools are practically secondary schools with an agricultural bias, and form a link between the rural school and the agricultural college. They are also used as a preliminary stage in the education of boys and girls who wish to become teachers and eventually graduate in the State Training College and the University. A local council is to be appointed for each school, and will exercise a general oversight over its operations. The experimental plots at these schools have aroused much interest among the farmers from the surrounding districts. A Supervisor of Agriculture reports and gives advice on the teaching of agriculture in the State Schools. The elementary principles of agriculture are now taught in about 600 State Schools.

Although *Queensland* possesses an Agricultural College and several experimental farms, there is no agricultural institution directly connected with the Education Department. The Government, however, provides a small grant to encourage the study of agriculture, horticulture, and kindred subjects in the State Schools, while a departmental teacher of agriculture visits the schools and gives assistance in agricultural, horticultural, and nature study work. Some excellent experimental work has been carried out at a few of the schools, while gardens have been established wherever circumstances permitted. Short courses of instruction for teachers have been instituted at the Gatton College. A large number of teachers have gained a practical knowledge of milk and cream testing, and the subject is now added to the programme of instruction in several of the dairying districts.

In *South Australia* the Public Schools' Floral and Industrial Society, founded in 1880, holds annual exhibitions of school work from all parts of the State. In addition, it has for some years undertaken the distribution of flower seeds among school children at a very cheap rate, and has thus fostered the love of horticulture with remarkable success. A special instructor has been appointed to give assistance to teachers desirous of making their school gardens aid in nature study work.

In *Western Australia* an advisory teacher of nature study visits the schools and gives advice in regard to proper methods in horticulture and experimental agricultural work. The number and usefulness of the gardens and experimental plots attached to State schools shew marked improvement each year.

8. Teachers in State Schools.—The distribution of the teaching staff in the State Schools during the year 1911, including teachers of needlework, was as follows:—

TEACHING STAFF IN STATE SCHOOLS, 1911.

(COMMONWEALTH.)

State.	Principal Teachers.		Assistants.		Pupil or Junior Teachers.		Sewing Mis-tresses.	Total.		
	Males.	Fem.	Males.	Fem.	Males.	Fem.		Males.	Fem.	Total.
New South Wales	2,265	559	1,005	2,151	..	...	112	3,270	2,622	6,092
Victoria ...	1,551	673	283	936	384	1,328	417	2,218	3,354	5,572
Queensland ...	719	512	267	645	238	352	...	1,224	1,509	2,733
South Australia ...	279	378	70	358	37	119	84	386	939	1,325
Western Australia	277	208	93	359	18	88	66	388	721	1,109
Tasmania ...	178	205	17	126	63	227	...	258	558	816
Northern Territory	1	2	...	...	...	...	1	1	3	4
Commonwealth	5,270	2,537	1,735	4,575	740	2,114	680	7,745	9,906	17,651

It will be observed that there is a fairly large number of junior teachers, or pupil teachers, as they are called in most of the States. The pupil teachers will, however, in time disappear, and their places will be filled by young people who have undergone a course of training in schools specially provided for the purpose. Allusion to the methods of training will be found in the next paragraph.

9. **Training Colleges.**—The development of the training systems of the various States has been alluded to at some length in preceding issues of the Year Book. The present position is as follows:—

(i.) *New South Wales.* During 1911, the total number of students in the Blackfriars Training College was 318, women students numbering 175. A branch institution was opened early in 1911 at Hereford House for the training of candidates for the position of teacher or assistant at small country schools and this was attended by 170 students. At the various district schools there were during 1911, 187 first-year and 173 second-year probationary students. Of the latter, 170 passed the entrance examination for the Training College.

(ii.) *Victoria.* Candidate teachers in this State are trained in the District High Schools or Agricultural High Schools, the period of probation being supplemented by a course of training for two years in the Senior Training College at Melbourne. There are twenty District High Schools now in operation, of which ten give training in elementary agriculture. The present Training College dates back to 1874, but during the retrenchment period, viz., from 1893 to 1900, it was closed. The institution was reopened in February, 1900, with an enrolment of fifty-seven students. By the 30th June, 1911, the number had increased to 115. The College lectures are also attended by considerable numbers of private students qualifying for certificates as Infant, Kindergarten or Primary teachers. A Training College Hostel has been established and a Correspondence class formed for country teachers desirous of qualifying for the Infant Teachers' Certificate. The students at the Hostel receive training in domestic economy. Five city and four country practising schools are attached to the Training College. The University Secondary Practising School, with an enrolment of 126 in 1911, gives teaching practice for secondary students taking the diploma course at the Melbourne University.

(iii.) *Queensland.* There is no Training College in Queensland at the present time, but it is hoped ere long to establish one at Brisbane in affiliation with the University of Queensland. Young people of both sexes are admitted to the service as pupil-teachers at the age of fourteen years, the only training received being that given by the principals of the schools to which they are appointed. The school for infants at Kangaroo Point has, however, been specially staffed and equipped for training Kindergarten teachers. It is proposed to establish similar institutions at Rockhampton and Townsville.

(iv.) *South Australia.* During the year 1910 the system of training in force in South Australia was remodelled and improved. Prior to this year students had devoted themselves chiefly to academic studies, but in 1910 provision was made for increased attention to the theory and practice of teaching. District courses of training were established to prepare teachers for work in primary and infant schools, and an advanced course was outlined for those who will become High School teachers. Each of these courses extends over a year. Students in the primary course who shew special ability may be granted a second year's training. The special course for Secondary Schools will give students an opportunity of obtaining the diploma of education. There were 45 students in the Training College in 1911. At the Adelaide High School 35 pupil-teacher students remained from 1910 and 43 new candidates were admitted. Practice in teaching is gained by the student teachers at the Observation School, which also provides training for teachers qualifying for appointment to provisional schools. Twenty-six candidates passed the prescribed test for admission as pupil teachers.

(v.) *Western Australia.* A Training College for teachers was opened at Claremont in 1902. The original building provided accommodation for sixty students, but extensions were opened in 1908, and the number in training during 1911 was 64. The course in the Training College lasts two years. Central classes for "monitors" (*i.e.*, pupil teachers) were established at Perth in 1903, and monitors outside the metropolitan area are instructed by correspondence. A Normal School was established in Perth in 1907 for the purpose of providing a two years' course of higher instruction for a limited number of children who had completed the State School course and intended to become teachers. The pupils in attendance during 1910 numbered 59, of whom 33 were girls. In February, 1911, the Normal School was closed and replaced by a better equipped institution known as the Modern School. To assist teachers of small schools to gain some experience of the best method of school management, a Model School has been established at Gosnell's, and arrangements have been made for intending teachers, as well as those actually in charge of small schools, to spend a portion of their time at this institution. Special courses of instruction have been instituted to provide training for applicant teachers for small country schools, this plan being adopted to meet the growing demand for teachers in newly settled areas. Moreover, schools of instruction for teachers in charge of the smaller country schools are held in different centres by district inspectors as well as in Perth; an advisory teacher visits the schools in outlying districts; while camps of instruction are held to give practice in cadet training.

(vi.) *Tasmania.* The system of training adopted in Tasmania is as follows:—(a) The candidate is selected at fourteen years of age by a head teacher, and assists as a "monitor" for about a year, during which period he must give proof of suitability for training. (b) At the end of this period there is a two years' course of training in the Training College. (c) The candidate then returns to his own school and teaches there for two years, the head teacher being responsible for his training in practical work, while the Training College authorities give lessons by correspondence. (d) The last stage is a final year in the Training College as a senior student. Some of the more advanced are granted a second year's training, and it is proposed to allow at least one each year to qualify for the Diploma of Education at the Melbourne Training College. During 1911 there were 90 students in training.

10. **School Savings Banks.**—Returns shew that these institutions are in existence in three States. In New South Wales, there were 710 banks at the end of 1911, the deposits amounting to £30,122, and withdrawals to £29,236. Since the establishment of the banks in 1887, deposits totalled £405,762, and withdrawals £393,953. Of the latter sum £96,608 was placed to children's accounts in Savings Banks. In South Australia, 188 schools had £3705 to their credit; and in Western Australia, there were 185 school banks with 9869 depositors and £10,324 at credit.

11. **Expenditure on State Schools.**—The net expenditure on State education during 1901 and for the five years ended 1911 is shewn below. The figures do not include expenditure on buildings, which is shewn separately in a subsequent table.

EXPENDITURE ON MAINTENANCE, STATE SCHOOLS, 1901 and 1907-11.
(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
1901 ...	623,734	656,907	256,245	152,006	89,694	37,710	...	1,816,296
1907 ...	816,249	677,701	297,210	152,400	159,122	52,830	...	2,155,512
1908 ...	934,603	692,410	299,227	152,950	164,456	60,407	...	2,304,053
1909 ...	940,534	726,020	309,704	164,863	166,103	73,532	...	2,380,756
1910 ...	979,775	783,246	323,372	177,827	172,470	74,907	...	2,516,597
1911 ...	1,048,584	834,276	351,942	198,979	187,301	84,317	629	2,706,028

The expenditure per head of average attendance for each of the years given above will be found in the succeeding table. As the figures shew, Western Australia has the highest average, followed by New South Wales and Victoria, the lowest rate being in Tasmania.

COST PER HEAD OF AVERAGE ATTENDANCE, STATE SCHOOLS, 1901 and 1907-11.
(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	N. T.	C'wlth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901	4 0 10	4 7 0	3 12 9	3 9 5	5 9 3	2 12 11	...	4 0 8
1907	5 7 4	4 12 0	4 8 11	4 0 6	6 8 11	3 12 9	...	4 17 4
1908	5 19 9	4 16 6	4 8 11	4 0 1	6 10 10	3 15 9	...	5 3 3
1909	5 17 6	4 19 5	4 8 0	4 6 2	6 4 6	4 4 7	...	5 3 11
1910	6 4 5	5 8 0	4 13 2	4 14 9	6 5 8	4 3 4	...	5 10 5
1911	6 10 5	5 13 11	5 0 5	5 2 10	6 7 2	4 13 0	10 9 7	5 16 8

Expenditure on school buildings in each of the years quoted was as follows:—

EXPENDITURE ON STATE SCHOOL BUILDINGS, 1901 and 1907-11.
(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1901 ...	57,663	36,040	33,421	13,656	49,073	7,762	197,615
1907 ...	103,348	68,416	30,340	15,839	38,928	7,216	264,587
1908 ...	146,715	106,983	44,333	22,726	34,299	8,659	363,715
1909 ...	149,767	162,932	57,349	31,512	31,099	8,442	441,101
1910 ...	191,188	118,556	50,668	44,025	47,637	16,957	469,031
1911 ...	176,194	117,048	53,953	35,581	58,406	16,548	457,730

The total net cost and the net cost per scholar in average attendance during the year 1911 were as follows:—

NET TOTAL COST, STATE SCHOOL EDUCATION, 1911.
(COMMONWEALTH.)

Item.	N.S.W.	Vic.	Q'land.	S. Aust.	W. A.	Tas.	N. T.	C'wealth.
	£	£	£	£	£	£	£	£
Net cost of education, including buildings ...	1,224,778	951,324	405,895	234,560	245,707	100,865	629	3,163,758
Per scholar in average attendance ...	£7 12/5	£6 9/11	£5 15/10	£6 1/2	£8 6/10	£5 11/2	£10 9/7	£6 16/5

The average for the Commonwealth in 1901 was £4 9s. 3d. per scholar in average attendance.

§ 3. Private Schools.*

1. **School Teachers, etc., in 1911.**—The following table shews the number of Private Schools, together with the teachers engaged therein, and the enrolment and average attendance in 1911:—

PRIVATE SCHOOLS, 1911.

(COMMONWEALTH.)

State.	Schools.	Teachers.	Enrolment.	Average Attendance.
New South Wales	756	3,659	60,963	51,569
Victoria	587	1,975	55,893	45,000
Queensland	141	729	16,100	13,560
South Australia	176	665	11,650	9,395
Western Australia	123	421	9,000	8,015
Tasmania	114	349	7,138	5,009
Northern Territory	1	2	50	40
Commonwealth	1,898	7,800	160,794	132,588

The figures for Queensland include the returns from Grammar Schools, of which there are ten—six for boys and four for girls. These schools are governed by boards of trustees, partly nominated by Government, and partly by the subscribers to the funds. The trustees make regulations regarding the fees of scholars, the salaries of teachers, and generally for the management of the schools. Each school is endowed by the Government at the rate of £750 per annum together with an additional £250 to provide district scholarships, of which five were allotted to each school from 1st January, 1911. During the year all the grammar schools were inspected by the departmental Inspector-General.

2. **Growth of Private Schools.**—The enrolment and average attendance at Private Schools during 1891, 1901 and in each year of the period 1907 to 1911 are shewn below:—

ENROLMENT AND ATTENDANCE AT PRIVATE SCHOOLS, 1891 to 1911.

(COMMONWEALTH.)

Year.	Enrolment.	Average Attendance.	Year.	Enrolment.	Average Attendance.
1891 ...	124,485	99,588	1909 ...	164,428	127,069
1901 ...	148,659	120,742	1910 ...	158,694	129,872
1907 ...	152,037	122,878	1911 ...	160,794	132,588
1908 ...	152,399	125,530			

In view of the growth in population during the period covered by the table the increase in enrolment and attendance does not afford room for much satisfaction. The returns will no doubt in future be to some extent adversely affected by the development of the Higher State Schools alluded to in a preceding paragraph.

* Private Schools include all schools not wholly under State control. The term "private" though popularly applied is, of course, a misnomer.

3. **Defects in Returns of Private Schools.**—Throughout Australia, until quite recently, no administrative machinery existed by means of which supervision could be exercised over the course of education carried out under other aegis than that of the Departments of Education themselves. These departments were without authority over the qualifications of the teaching staff, the equipments, the curricula, or general circumstances of private or denominational schools. With the exception of Western Australia, Victoria, and Tasmania, this state of things continues to the present time.

Without a thorough system of registration of all schools (public or private) the certainty of the operation of the compulsory clause of Public Instruction Acts must necessarily be insecure. Proper statistical information, moreover, cannot be obtained without imposing upon all schools the duty of rendering complete and prompt returns in regard to enrolment, attendance, teaching staff, equipment, etc.

Recent educational criticism has led, not only to a better training of teachers in State Schools, and, to some extent, in Private Schools, but also to a better recognition of the importance of accurate information as to the progress of educational events. It is understood that in New South Wales steps will be taken shortly to secure more adequate information as to the condition of schools generally.

In Victoria up to the year 1905, no attempt had been made to bring Private Schools under general administrative control, but the Registration of Teachers and Schools Act of 1906, and the Education Act of 1910, established a registration scheme under a special committee. At present, the committee consists of nine members of the Council of Education. Section 60 of the Act of 1910, also empowers the Minister of Education to authorise the inspection of any school (other than a State School) in order to ascertain whether the instruction given is satisfactory. In his first report, the inspector of registered schools pointed out that there is a fair number of institutions which are very unsatisfactory both as regards buildings and quality of instruction given therein.

In Queensland, with the exception of the Grammar Schools, which are now examined annually, there is practically no control over the Private Schools, beyond the fact that they may submit themselves to inspection if so desired, and there is apparently no provision in South Australia for any Government supervision over Private School affairs.

In Western Australia, non-Government schools must be declared efficient by the Education Department if attendance at them is to be recognised as fulfilling the requirements of the law, and the school registers must be open to the inspection of the compulsory officers of the Department.

In Tasmania the Education Act requires the teachers of other than State Schools "to furnish during January of each year returns showing attendances at such schools." Despite the fact that penalties are prescribed for non-compliance with the law, nevertheless many teachers neglect to return the forms sent out. Provision has been made for registration of private teachers and schools very much on the lines adopted in Victoria. The Act declares that all persons who were employed in a *bona fide* manner for at least three months before 25th October, 1906, are entitled to be registered as teachers without submitting proof of professional qualifications. No person can be registered as a private teacher since July, 1907, unless the Board is satisfied as to his fitness for the work.

§ 4. Free Kindergartens.

The following information regarding Free Kindergartens in the Commonwealth has been compiled from particulars supplied by the principals of the chief institutions in each State, except in the case of Victoria, the details for this State being furnished by the Inspector of Registered Schools. /

FREE KINDERGARTENS IN THE COMMONWEALTH, 1911.

State.	No. of Schools.	Teachers.	Average Attendance of Children.	Number of Teachers in Training.
New South Wales (Sydney) ...	8	40	410	64
(Newcastle) ...	3	4	104	7
Victoria (Melbourne) ...	17	215	731	14
Queensland (Brisbane) ...	4	9	92	5
South Australia (Adelaide) ...	5	21	300	13
Tasmania (Hobart) ...	1	4	50	3
(Launceston) ...	1	5	30	4
Total ...	39	298	1,717	110

The figures given in the column referring to teachers include voluntary helpers and student teachers as well as permanent instructors. In New South Wales the total includes thirty-one student teachers, the Victorian returns are inclusive of one hundred and seventy-eight voluntary helpers, those for South Australia one voluntary and thirteen student teachers, while there were four student teachers at the Launceston institution.

It must, of course, be distinctly understood that the information given above refers to Kindergartens under private management, and is exclusive of institutions controlled by the Education Departments of the various States.

§ 5. Universities.

1. Origin and Development.—The history of the foundation and progress of the four then existing Australian Universities was traced at some length in Year Books I. and II. In the present volume space will permit of only a very brief reference to the subject.

(i.) *University of Sydney.* The Act of Incorporation of the University of Sydney received Royal assent on the 1st October, 1850, and the first Senate was appointed on the 24th December of that year. The first matriculation examination was held in October, 1852, when twenty-four candidates passed the required test, and the formal inauguration ceremony took place on the 11th October of the same year. A Royal Charter was granted to the University on the 27th February, 1858. Women students were admitted in 1881. At the inception of the University there were only three professorships. The present staff consists of eighteen professors, five assistant professors, and ninety-one lecturers and demonstrators. There are, in addition, seven honorary lecturers, four honorary demonstrators, as well as various miscellaneous assistants in laboratories and four curators of museums. Considerable modifications, particularly in regard to the election of the Senate, were introduced by the University (Amendment) Act of 1912. Ten of the twenty-four Fellows constituting the Senate are now elected by the graduates of the University.

(ii.) *University of Melbourne.* This institution was established by Act of Parliament assented to on the 22nd January, 1853, and its first Council was appointed on the 11th April of that year. The foundation stone of the main building was laid on the 3rd July, 1854, and the University was formally inaugurated on the 13th April, 1855. By Royal Letters Patent issued in 1859 its degrees are, like those of the Sydney institution, declared of equal status with those of any other University in the British Empire. Women students attended lectures for the first time in 1881. The University, which

began in 1855 with Schools of Arts and Laws, has now a staff of eighteen professors, sixty-one lecturers and demonstrators, as well as 60 miscellaneous assistants. The Conservatorium of Music has a staff numbering twenty-five.

(iii.) *University of Adelaide.* This University was established by Act of Parliament in 1874. Its origin and progress was largely due to the munificence of the late Sir Walter Watson Hughes and Sir Thomas Elder, G.C.M.G., the total gifts of the latter amounting to over £100,000. The academical work of the institution was commenced in March, 1876, when eight matriculated and fifty-two non-graduating students attended lectures. The foundation stone of the University buildings was laid on the 30th July, 1879, and the buildings were opened in April, 1882. In 1881, by Royal Letters Patent, the degrees granted by the institution were recognised as of equal distinction with those of any University in the British Empire. The Elder Conservatorium of Music was opened in 1898. Power was given by Act of Parliament in 1880 to grant degrees to women. At first there were only four professorships in the University, whereas the present staff consists of ten professors, twenty-eight lecturers and thirteen assistant lecturers, exclusive of the staff at the Conservatorium, which numbers ten.

(iv.) *University of Tasmania.* The Act to establish the University of Tasmania (Hobart) was assented to on the 5th of December, 1889. At the present time, the institution, which is small but efficient, possesses a staff of four professors, four lecturers, and three assistant lecturers and demonstrators. Under Statute dated 13th April, 1905, the Zeehan School of Mines and Metallurgy was affiliated to the University.

(v.) *University of Queensland.* The Act to establish the University of Queensland was passed in 1909, and the first Senate was appointed on the 14th April, 1910. The University was opened on the 14th March, 1911, when 60 students were matriculated. Provision has been made for a Correspondence Study department in connection with the institution. At the present time there are four professors, *i.e.*, one each of classics, chemistry, engineering, and for mathematics and physics, with a liberal complement of lecturers and demonstrators.

(vi.) *University of Western Australia.* The University Commission in this State has recommended the establishment of a University somewhat on the lines of those in the eastern States, but with such amendments as would bring it as far as possible into accord with the most modern requirements. The Act establishing a University was passed on the 18th February, 1911. In addition to lectureships, it is proposed to open the institution with four professorships—modern literature and history, mathematics and physics, chemistry, and engineering and mining—while a chair in agriculture will be endowed by the generosity of Dr. Hackett.

2. Teachers and Students of Universities.—The following table shews the number of professors and lecturers and the students in attendance at each of the Commonwealth Universities during the year 1911:—

UNIVERSITIES.—TEACHERS AND STUDENTS, 1911.

University.	Professors.	Lecturers.	Students attending Lectures.		
			Matriculated.	Non-matriculated.	Total.
Sydney	23	91	1,077	330	1,407
Melbourne	18	61	...	...	1,129*
Adelaide	10	28	345	276	621†
Tasmania (Hobart) ...	4	4	72	75	147
Queensland (Brisbane)†	4	6	78	5	83

* Exclusive of 91 music students.

† Exclusive of 292 music students.

‡ Opened in 1911.

3. University Revenues.—The income of the Universities from all sources during the year 1911 was as follows:—

UNIVERSITIES.—REVENUE, 1911.

University.	Government Grants.	Fees.	Other.	Total.
	£	£	£	£
Sydney	22,550	20,206	26,801	69,557
Melbourne	28,190	31,242	7,619	67,051
Adelaide	5,391	9,381	6,873	21,645
Tasmania (Hobart) ...	4,500	1,234	1,196	6,930
Queensland (Brisbane) ...	11,250	1,019	445	12,714

The column "Other" includes the receipts from private foundations. The extent to which the Universities have benefited by private munificence will be apparent from the following table:—

PRINCIPAL PRIVATE BENEFACTIONS TO AUSTRALIAN UNIVERSITIES.

University of Sydney.		University of Melbourne.		University of Adelaide.	
Donor.	Amount.	Donor.	Amount.	Donor.	Amount.
	£		£		£
J. H. Challis ...	277,000	Sir Samuel Wilson	30,000	Sir Thos. Elder ...	98,760
Sir P. N. Russell ...	100,000	James Stewart ...	25,624	Sir W. Hughes ...	20,000
Thos. Fisher ...	30,000	Hon. Francis Ormond	20,000	Hon. J. H. Angas	10,000
Edwin Dalton ...	8,000	John Hastie ...	19,140	R. Barr Smith ...	10,150
Hugh Dixon ...	7,050	Robert Dixon ...	10,837	Other donations ...	13,946
Hon. Sir W. Macleay	6,000	David Kay ...	5,764		
Mrs. Hovell ...	6,000	Henry Dwight ...	5,000		
Thos. Walker ...	5,700	Wm. Thos. Mollison	5,000		
Other donations ...	52,740	Other donations ...	43,534		
Total	£ 492,490	Total	£ 164,899	Total	152,856

The credit balances of some of the above endowments now amount to very considerable sums. For example, on the 31st December, 1911, the Challis Fund amounted to over £311,000, and the Fisher bequest to over £40,000. Altogether the totals for the University of Sydney might be increased by £54,000. In the case of Melbourne University the Stewart fund on the 31st December, 1911, stood at £30,000, the Hastie at £19,222, the Dixon fund at £12,000, etc.

In addition to the above there were various other bequests to Sydney University—*e.g.*, collection of Egyptian antiquities, etc., by Sir Charles Nicholson, and Natural History collection by Mr. Geo. Masters, while the building for the Natural History Museum was given by Sir W. Macleay. Numerous prizes and scholarships have also been given to the various colleges. In Melbourne, the Hon. Francis Ormond's benefactions to Ormond College amounted to about £108,000. Private benefactions to the University of Tasmania and the newly-established University of Queensland amount to £2445 and £3430 respectively.

4. **University Extension.**—These lectures were instituted at Sydney University in 1886, but under a statute of the Senate, approved of in 1892, a Board was appointed, which was empowered from time to time to recommend to the Senate the names of suitable persons for giving courses of lectures, and to hold examinations in the subjects of the lectures. The Board receives and considers applications from country centres, and makes provision for engaging lecturers and managing the entire business connected with the various courses. The project has only met with fair success, no lectures having been given in some years, but lately there appears to be an awakening of interest in the matter. The Board also arranged for courses of lectures in Queensland, Victoria and Western Australia. In 1911 the average attendance at extension lectures in New South Wales was 131.

University extension lectures in Victoria date from the year 1891, when a Board was appointed by the Melbourne University for the purpose of appointing lecturers and holding classes and examinations at such places and in such subjects as it might think fit. Interest in University extension has varied in Victoria, the attendance at the various centres numbering about 570 in 1911.

The Adelaide University has also instituted short courses of extension lectures in Arts and Science, to which students are admitted on payment of a nominal fee. Public intimation of these lectures is made from time to time during the session. For 1911 a course of twelve lectures was provided. The University of Tasmania provides for courses of lectures at Launceston, which are delivered weekly by members of the University teaching staff.

As pointed out previously, a correspondence study department has been inaugurated in connection with the University of Queensland in order to overcome, as far as possible, the difficulties of students who desire to benefit by University teaching, but who for various reasons are unable to attend the lectures. At present the work of this department is confined to the Arts course.

§ 6. Technical Education.

1. **General.**—Although provision has been made in some of the States in respect to many necessary branches of technical education, the total provision made would imply that this branch of education has not been regarded as of great importance. As will be seen later on, the expenditure on technical education for the whole of Australasia is comparatively insignificant.

2. **New South Wales.**—The present organisation of technical education in this State dates from the year 1883, when a Technical Education Board was appointed as a result of suggestions made at the Technological Conference held in 1879. This Board continued its function till November, 1889, when it was dissolved, and the work has thenceforward been carried on as a branch of the Public Instruction Department. The chief centre of activity is, of course, in Sydney, where the Technical College and Technological Museum are situated, the college having been opened for the reception of students early in 1892. Colleges have also been erected in some of the chief country towns—at Maitland in 1890; Newcastle 1896; Bathurst 1898; Broken Hill 1898; Albury 1899; and Goulburn 1902. In other centres classes have been established in various subjects whenever the prospects are sufficiently encouraging. The table below gives some idea of the development of technical education in New South Wales:—

TECHNICAL EDUCATION, NEW SOUTH WALES, 1901 and 1907-11.

Year.	Number of Classes.	Number of Enrolments.	Average Weekly Attendance.	Number of Lecturers and Teachers.	Fees Received.
					£
1901	331	12,267	7,721	133	8,068
1907	718	17,662	11,260	273	13,046
1908	790	18,490	10,498	280	14,176
1909	864	21,242	12,265	292	15,475
1910	886	22,822	13,255	334	15,873
1911	875	23,621	15,074	329	16,395

The enrolments in 1911 were distributed as follows:—

Sydney College Classes	11,878
Suburban Classes	2,869
Country Classes	7,274
	22,021
Classes at Public Schools	1,600
Total	23,621

Technical Day Schools have been established at the Central College in Sydney, and at Newcastle and Goulburn. The course of instruction covers two years and is designed to prepare young students for admission to the Engineering, Mining, or Architecture classes at the College. As mentioned elsewhere, higher technical training is afforded at the Schools of Mines and Engineering in connection with the University. References to the Agricultural Colleges will be found in the section dealing with Agriculture.

3. **Victoria.**—Technical instruction in mining has for many years received considerable attention in Victoria, the Ballarat School of Mines, which was established as far back as 1870, having achieved an Australasian reputation. The general scheme of instruction, however, lacked cohesion, and it was not until after the publication of the Report of the Royal Commission on Technical Education, which was appointed in 1899, that many defects were remedied. Prior to the passing of the Education Act of 1910, the Technical Schools were managed by local Councils receiving grants from the Education Department. It is now proposed to place them directly under the control of the Department, and some of the smaller institutions have been transferred already, while the larger schools will be taken over as soon as the necessary arrangements can be made. It is hoped that the Agricultural and District High Schools will serve as an effective connecting link between the ordinary State Schools and the Technical Schools. At present there are 19 Technical Schools receiving State aid, and of these 7 afford instruction in Science, Art, and Trade subjects; 2 in Art and Science; 4 in Art and Trade; while 4 confine their teaching to Art, and 1 to Trade subjects. The largest technical institution in Melbourne is the Working Men's College, founded in 1887. The College, in addition to giving instruction in a large number of technical subjects, is also a School of Mines. Science and Art classes have been established at some of the larger State Schools.

TECHNICAL EDUCATION, VICTORIA, 1911.

Institution.	Receipts.	Total Enrolments.	Individual Students.
	£		
Melbourne Working Men's College ...	16,782	4,504	2,112
Ballarat School of Mines ...	8,936	1,398	550
Bendigo School of Mines ...	4,361	557	196
Geelong Technical College ...	1,000	422	267
Bairnsdale School of Mines ...	851	172	62
Maryborough Technical College ...	750	172	82
Stawell School of Mines ...	783	175	88
Castlemaine Technical School ...	1,052	177	120
Daylesford Technical School ...	350	117	88
Melbourne College of Domestic Economy ...	541	144	59
Sale Technical School ...	422	54	31
Horsham Working Men's College... ..	350	88	81
Glenferrie ...	2,899	508	369
Echuca School of Art ...	300	75	40
Kyneton Technical School ...	262	73	50
Nhill School of Art ...	200	69	50
Warrnambool School of Arts ...	150	29	28
Prahran Technical School ...	101	105	38

4. **Queensland.**—The control of Technical Education in Queensland was removed from the hands of the local Committee in 1905, and rested in the Education Department. At present the Director is assisted in his administration by a Superintendent, and an Inspector of Technical Colleges. During 1911 there were 16 colleges in operation—Bowen, Bundaberg, Cairns, Central, Charters Towers, Gympie, Herberton, Ipswich, Mackay, Maryborough, Mount Morgan, Rockhampton, Sandgate, Toowoomba, Townsville, Warwick. The progress of Technical Education since 1905 is shown in the following table.

TECHNICAL EDUCATION, QUEENSLAND, 1905-1911.

Year.				Number of Individual Students.	Number of Examination Entries.	Endowment.
						£
1905	...	...	...	3,892	1,238	5,460
1906	...	...	...	4,321	1,439	7,931
1907	...	...	...	4,702	1,741	9,610
1908	...	...	...	5,187	2,041	10,720
1909	...	...	...	5,608	2,160	13,589
1910	...	...	...	5,744	4,057	*20,612
1911	...	...	...	7,089	5,228	*38,212

* Including amount spent on buildings and equipment.

Greater attention is being devoted to the development of trade classes; and the Technical College authorities have been assisted by the University Professors in the preparation of a properly organised system of Trade instruction. The Department now pays about £2000 per annum to the Technical Colleges for the instruction of selected State School pupils in approved subjects. Tuition by correspondence is given by the Central Technical School. It is believed that the raising of the school age to 14 years, coupled with the establishment of High Schools, will result in a more effective co-ordination between ordinary and technical education in the State.

5. **South Australia.**—A considerable amount of attention has been given to technical education in South Australia, particularly in connection with the mining industry. The School of Mines and Industries in Adelaide was founded in 1889. There are in addition Schools of Mines at Moonta, Port Pirie, Kapunda, and Gawler. A School of Design, Painting, and Technical Arts has been established in Adelaide, with branches at Port Adelaide and Gawler. The conditions connected with the country Technical Schools, viewed from the standpoint of the Department of Education, are not considered satisfactory. While the Government bears the bulk of the cost of maintenance, the Minister for Education is not consulted in regard to the organisation, curriculum, or staffing of the schools. Although good work has been accomplished, the system of control of Technical Schools by independent councils is declared by the Director of Education to be no longer suitable, and stress is laid on the necessity for co-ordinating technical effort under one central authority.

TECHNICAL SCHOOLS, SOUTH AUSTRALIA, 1911.

Name of School.	Teachers.		Students Enrolled.	Average Weekly Attendance.
	Ordinary.	Special.		
South Australian School of Mines and Industries ...	24	19	3,441	2,918
School of Mines—Port Pirie ...	1	16	281	133
Moonta... ..	1	9	190	129
Kapunda	6	...	136	123
Mt. Gambier	4	2	220	176
Gawler	1	8	188	113
Total	37	54	4,456	3,592

6. **Western Australia.**—A Technical School was established at Perth in 1900, and since its opening has progressed rapidly. Extensive additions to the buildings were made in 1909, and the remodelled institution was opened in 1910. There are branch institutions at Midland Junction, Fremantle, Claremont, Coolgardie, Kalgoorlie, Boulder, Murchison, Northam, Albany, Bunbury and Geraldton, while it is proposed to open

classes at other centres as occasion demands. The schools are all under the control of the Education Department, the officer entrusted with their supervision being styled Director of Technical Education. The Director also supervises the School of Mines at Kalgoorlie, which is controlled by the Mines Department. Advanced work at present is taken only in Perth, Fremantle, and Boulder by schools under the Education Department and in Kalgoorlie by the School of Mines, the other branches dealing almost entirely with preparatory work chiefly in Continuation Classes. At the Perth School the full course can now be taken for the B.Sc. degree of the University of Adelaide. It is hoped that in this way a nucleus will be formed for an efficient staff of Science teachers for the Education Department and the State University. The number of individual students at each college during the last term of 1911 was as follows:—

TECHNICAL CLASSES, WESTERN AUSTRALIA, 1911.

College.	Students.	College.	Students.
Perth	911	Fremantle	287
Boulder	232	Midland Junction	111
Menzies	18	Northam	57
Claremont	138	Albany	49
Murchison	22	Geraldton	71
Coolgardie	65	Bunbury	39
Kalgoorlie	185		

7. **Tasmania.**—In this State provision for technical education dates from the year 1888. At the present time the most important technical institution is the School of Mines and Metallurgy at Zeehan. Courses of instruction are given in metal mining and in metallurgical chemistry and assaying, the diploma in metal mining entitling the holder to the Government certificate of competency as a mine manager. The institution is affiliated to the University of Tasmania. There are also three other schools under the control of the Education Department, each managed by a committee appointed by the Governor-in-Council. Tasmanian Technical Schools naturally devote their chief attention to mining and mineralogy.

Particulars regarding the schools are given hereunder:—

TECHNICAL CLASSES, TASMANIA, 1911.

No. of schools	Students enrolled	Average attendance	Receipts	£
...	{ Government aid ...	2,675
...	{ Fees ...	667
...	{ Other ...	37

* Estimated.

The table hereunder shows the enrolment and attendance at Technical Schools and classes in the Commonwealth during 1911:—

ENROLMENT AND ATTENDANCE AT TECHNICAL SCHOOLS, 1911. (COMMONWEALTH.)

State.	Enrolment	Average Attendance	Technical Classes at State Schools.	
			Enrolment	Av. Attend.
New South Wales	22,021	14,560	1,600	514
Victoria	7,008	†3,500	242	...
Queensland	7,089	5,567	...	...
South Australia	4,119	3,592	347	...
Western Australia	4,595	*	...	...
Tasmania	833	†402	...	...

* Not available.

† Estimate.

8. **Expenditure on Technical Education.**—The expenditure on technical education in each State during the period 1907 to 1911 is shewn below :—

EXPENDITURE ON TECHNICAL EDUCATION, 1907 to 1911.
(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Queensland.	South Aust.	West. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1907 ...	33,568	22,322	9,610	8,006	7,940	2,418	83,864
1908 ...	51,814	26,839	10,720	7,856	9,264	2,215	108,708
1909 ...	61,452	27,039	13,589	12,742	9,422	3,209	127,453
1910 ...	71,002	32,314	20,612	13,476	9,987	3,055	150,446
1911 ...	77,160	41,144	38,212	13,017	14,590	3,726	187,849

The figures in the preceding table represent an expenditure of about 10d. per head of the population of the Commonwealth, as compared with 12s. 1d. per head spent on maintenance for primary education, and clearly shew that technical education has not attained its proper place in the educational organisation of Australia. Expenditure on buildings, included in the foregoing totals, comprises £10,393 in New South Wales, £13,605 in Victoria; £18,697 in Queensland, and £162 in Western Australia.

§ 7. Business Colleges and Shorthand Schools.

There has been considerable development in recent years both in the number and scope of privately conducted institutions, which aim at giving instruction in business methods, shorthand, typewriting, the use of calculating machines, etc. Particulars for those States where the information is available are given in the table hereunder :—

BUSINESS COLLEGES, SHORTHAND SCHOOLS, &c., 1911.

State.	Schools.	Teachers.	Students Enrolled.		Aver. Attendances.		Fees Recd.
			Males.	Females.	Males.	Females.	
New South Wales ...	19	102	3,336	4,223	1,490	1,741	£ 19,436
Victoria* ...	...	...	...	...	...	...	...
Queensland†	...	...	...	...	...	...	...
South Australia ...	5	39	890	585	551	430	6,484
Western Australia ...	8	19	418	398	218	285	3,434
Tasmania ...	3	9	50	135	24	57	900

* Not available. † Included in Private Schools.

The figures for average attendance shew a predominance of woman students in all States, except South Australia, the excess being due to the increasing number of girls finding employment as stenographers, and in clerical and accountancy work.

§ 8. Diffusion of Education.

1. **General Education.**—A rough indication of the state of education of the people is obtained at each Census under the three headings, "read and write," "read only," and "cannot read." The grouping of the whole population, exclusive of aborigines, in these three divisions is given for each Census since 1861 :—

EDUCATION AT CENSUS PERIODS, 1861 to 1911.

(COMMONWEALTH.)

State or Territory.	1861.	1871.	1881.	1891.	1901.	1911.
N.S.W. <i>a</i>	(Read & write 188,543 Read only... 46,024 Cannot read 116,293)	(296,741 56,391 149,866)	(507,067 49,372 193,386)	(835,562 43,539 244,853)	(1,071,935 29,728 253,183)	(1,379,631 6,442 260,661)
Vic. ...	(Read & write 328,362 Read only... 57,351 Cannot read 152,915)	(478,464 70,953 180,781)	(653,346 47,950 160,270)	(908,490 32,794 198,556)	(998,010 21,852 181,208)	(1,136,289 4,630 174,632)
Q'nsland	(Read & write 17,152 Read only... 3,680 Cannot read 9,227)	(74,940 12,080 33,034)	(136,436 13,657 63,432)	(276,381 14,618 102,719)	(376,294 11,737 110,098)	(508,703 3,416 93,694)
S. A. (<i>b</i>)	(Read & write 72,190 Read only... 18,535 Cannot read 36,105)	(117,349 21,509 46,768)	(200,057 15,267 64,541)	(236,514 9,571 74,346)	(290,748 8,283 64,126)	(344,095 1,785 62,678)
W. Aus.	(Read & write 7,683 Read only... 1,301 Cannot read 5,853)	(14,166 2,717 7,902)	(19,684 2,430 7,594)	(34,254 2,061 13,467)	(150,099 3,107 30,918)	(237,629 917 43,568)
Tas. ...	(Read & write 48,282 Read only... 13,136 Cannot read 28,559)	(55,941 13,946 29,441)	(74,966 9,606 31,133)	(103,138 6,287 37,242)	(133,579 3,907 34,989)	(155,295 918 34,998)
North'm T'rt'y (<i>c</i>)	(Read & write ... Read only... Cannot read ...)	(...)	(...)	(...)	(...)	(2,397 34 879)
Federal Capital T'rt'y (<i>d</i>)	(Read & write ... Read only... Cannot read ...)	(...)	(...)	(...)	(...)	(1,424 14 276)
C'mw'lth	(Read & write 662,212 Read only... 140,027 Cannot read 348,952)	(1,037,601 177,596 447,842)	(1,591,556 138,282 520,356)	(2,394,339 108,870 671,183)	(3,020,665 78,614 674,522)	(3,765,463 18,156 671,386)

(*a*) Including Federal Capital Territory prior to 1911. (*b*) Including Northern Territory prior to 1911. (*c*) Included in South Australia prior to 1911. (*d*) Included in New South Wales prior to 1911.

The proportion in the Commonwealth of the various classes per 10,000 of the population is shewn below for each Census period:—

PROPORTION OF EDUCATED AND ILLITERATE PER 10,000 PERSONS, 1861 to 1911.

(COMMONWEALTH.)

Division.	1861.	1871.	1881.	1891.	1901.	1911.
Read and write ...	5,752	6,239	7,073	7,543	8,004	8,452
Read only ...	1,217	1,068	615	343	208	41
Cannot read ...	3,031	2,693	2,312	2,114	1,788	1,507

2. **Education of Children.**—The figures in the preceding tables refer to the entire population of the Commonwealth, and as the age constitution of those dwelling in the various portions of Australia underwent considerable modifications during the period dealt with, a far more reliable test of the diffusion of education will be obtained by

a comparison of the Census returns in regard to children of school age. For comparative purposes this has been taken to include all children in the group over five and under fifteen years of age, and the degree of education of these at each Census will be found below:—

EDUCATION OF CHILDREN AT CENSUS PERIODS, 1861 to 1911.

(COMMONWEALTH.)

State or Territory.		1861.	1871.	1881.	1891.	1901.	1911.
N.S.W.	(Read & write	34,040	68,776	121,735	196,240	251,187	291,450
	Read only ...	20,345	26,886	25,100	21,375	15,934	993
	(a) Cannot read	25,472	32,924	41,663	48,580	60,734	34,793
Victoria	(Read & write	42,268	122,739	170,713	201,199	236,515	237,028
	Read only ...	25,518	39,636	25,249	15,656	13,128	410
	(Cannot read	19,341	29,490	21,421	27,441	27,765	19,621
Q'land...	(Read & write	2,156	12,698	33,317	62,402	95,635	117,347
	Read only ...	1,534	6,104	7,019	7,580	5,955	616
	(Cannot read	1,629	6,015	9,615	16,257	18,827	8,633
S. A. (b)	(Read & write	15,485	30,608	46,630	58,291	69,451	69,878
	Read only ...	8,748	12,432	7,926	4,618	4,229	248
	(Cannot read	6,907	10,074	12,483	17,988	15,480	9,638
W. Aus.	(Read & write	1,333	3,218	4,418	6,910	25,326	47,568
	Read only ...	226	617	1,260	933	1,815	159
	(Cannot read	1,015	1,795	1,593	2,348	5,431	5,234
Tas. ...	(Read & write	11,919	17,335	17,188	24,007	32,890	36,351
	Read only ...	2,348	4,143	4,108	2,974	1,795	186
	(Cannot read	4,581	6,663	6,606	8,829	8,475	5,575
N. T. (c)	(Read & write	...	...	...	...	...	195
	Read only...	...	...	...	...	...	...
	(Cannot read	...	...	...	...	...	118
Fed. Cap	(Read & write	...	...	...	...	...	322
	Read only...	...	...	...	...	...	2
	(Cannot read	...	...	...	...	...	47
C'wealth	(Read & write	107,201	255,374	394,001	549,049	711,004	800,139
	Read only ...	59,219	89,818	70,662	53,136	42,856	2,614
	(Cannot read	58,945	86,961	93,381	121,443	136,712	88,659

(a) Including Federal Capital Territory prior to 1911. (b) Including Northern Territory prior to 1911. (c) Included in South Australia prior to 1911. (d) Included in New South Wales prior to 1911.

In the case of Tasmania full details for the years 1861 and 1871 are not available, and the figures for those years are approximate. The variation in degree of education will be more readily seen by reducing the foregoing figures to the basis of proportion per 10,000, and the results so obtained are embodied in the following table, a glance at which is sufficient to demonstrate the remarkable strides that at least the lower branches of education have made since 1861. In that year, only 47 per cent. of the children of school age could read and write, while 26 per cent. were illiterate. The returns for 1911 shew that the proportion of those who could read and write had increased to over 90 per cent., while the totally ignorant had declined by nearly two-thirds.

For additional Census results of "Education," see pages 167 to 170.

EDUCATION OF CHILDREN (AGES 5 to 14) PER 10,000 AT CENSUS PERIODS. 1861 to 1911.

(COMMONWEALTH.)

State or Territory.	1861.	1871.	1881.	1891.	1901.	1911.
N.S.W. (a)	Read & write 4,263	5,349	6,458	7,372	7,662	8,907
	Read only... 2,547	2,091	1,332	803	486	30
	Cannot read 3,190	2,560	2,210	1,825	1,852	1,063
Victoria ...	Read & write 4,851	6,397	7,853	8,236	8,526	9,221
	Read only... 2,929	2,066	1,162	641	473	16
	Cannot read 2,220	1,537	985	1,123	1,001	763
Que'n'land	Read & write 4,053	5,116	6,670	7,236	7,942	9,269
	Read only... 2,884	2,460	1,405	879	495	49
	Cannot read 3,063	2,424	1,925	1,885	1,563	682
S. Aus. (b)	Read & write 4,973	5,763	6,956	7,206	7,790	8,761
	Read only... 2,809	2,341	1,182	571	474	31
	Cannot read 2,218	1,896	1,862	2,223	1,736	1,208
W. Aus. ...	Read & write 5,179	5,716	6,076	6,780	7,775	8,982
	Read only... 878	1,096	1,733	916	557	30
	Cannot read 3,943	3,188	2,191	2,304	1,668	988
Tasmania	Read & write 6,160	6,160	6,160	6,704	7,620	8,632
	Read only... 1,472	1,472	1,472	830	416	44
	Cannot read 2,368	2,368	2,368	2,466	1,964	1,324
Northern Territ'y (c)	Read & write ...	...	...	...	...	6,230
	Read only... ...	...	...	...	...	...
	Cannot read ...	...	...	...	...	3,770
Fed. Cap. Territ'y (d)	Read & write ...	...	...	...	...	9,868
	Read only... ...	...	...	...	...	5
	Cannot read ...	...	...	...	...	127
Com'w'lth	Read & write 4,757	5,910	7,061	7,588	7,984	9,027
	Read only... 2,628	2,078	1,266	734	481	29
	Cannot read 2,615	2,012	1,673	1,678	1,535	944

(a), (b), (c), (d), see notes to preceding table.

3. Education as shewn by Marriage Registers.—Another common method of testing the spread of education is to compare the number of mark signatures with the total number of persons married during each year of a series. The percentage of males and females signing with a mark to the total persons married in the Census years 1861 to 1901, and during each of the last seven years, was as follows. The figures refer to marriages in the Commonwealth in respect of which information was obtainable.

ILLITERACY AS SHOWN BY MARRIAGE SIGNATURES, 1861 to 1911.

(COMMONWEALTH.)

Proportion Signing with Marks of Total Persons Married.							
Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
	per cent.	per cent.	per cent.		per cent.	per cent.	per cent.
1861 ...	18.50	30.69	24.60	1906 ...	0.92	0.86	0.89
1871 ...	10.55	16.40	13.49	1907 ...	0.81	0.70	0.76
1881 ...	4.34	6.78	5.56	1908 ...	0.71	0.73	0.72
1891 ...	2.27	2.40	2.34	1909 ...	0.65	0.62	0.64
1901 ...	1.35	1.29	1.32	1910 ...	0.56	0.59	0.58
1905 ...	0.91	0.93	0.92	1911 ...	0.56	0.54	0.55

The table shows that there has been a large diminution in illiteracy, and judging from the figures for the last few years the proportion bids fair to practically disappear. Up to 1891 there was a higher proportion of illiteracy amongst females, but from 1910 onwards, generally speaking, the opposite condition prevailed.

§ 9. Miscellaneous.

1. **Scientific Societies.**—(a) *Royal Societies.* Despite the trials and struggles incidental to the earlier years of the history of Australia, higher education and scientific advancement were not lost sight of. Thus the origin of the Royal Society of New South Wales dates as far back as 1821, when it was founded under the name of the Philosophical Society of Australasia, Sir Thomas Brisbane being its first president. Scientific work was fitfully carried on by means of a society whose name varied as the years rolled on. It was called the Australian Philosophical Society in 1850. In 1856 the old Australian Society merged into a resuscitated Philosophical Society of New South Wales, and its papers were published up to 1859 in the Sydney Magazine of Science and Art (2 vols. 1858-9). Its present title dates from 1866. Some of the papers of the old Philosophical Society were published in 1825 under the title of "Geographical Memoirs of New South Wales" (Barron Field), and contain much that is interesting in regard to the early history of Australia. One volume containing the Transactions of the Philosophical Society of New South Wales (1862-65) was published in 1866. The journal of the Society did not begin to bear a serial number, however (vol. 1), until the year 1867. "Transactions of the Royal Society of New South Wales" was issued in 1867, the title of the series being altered to "Journal" in 1876. Up to the end of 1911 forty-five volumes had been published. The exchange list comprises the names of 434 kindred societies. At the present time the library contains about 21,000 volumes and pamphlets, valued at over £7500. Income and expenditure for the year ended 31st March, 1912, were £1421 and £1099 respectively. The Society had on the same date 310 members.

The Royal Society of Victoria dates from 1854, in which year the Victorian Institute for the Advancement of Science and the Philosophical Society of Victoria were founded. These were amalgamated in the following year under the title of the Philosophical Institute of Victoria, whilst the society received its present title in 1860. The first volume of its publications dates from 1855. The earlier publications dealt largely with Physics, later on Biology became prominent, while at present a large number of papers deal with Geology. Up to 1912 fifty-seven volumes of publications had been issued. The Society exchanges with 304 kindred bodies. The constitution of the society states that it was founded "for the promotion of art, literature, and science," but for many years past science has monopolised its energies. The library contains over 9000 volumes. Since its inception the society has received about £18,500 in annual subscriptions, while Government aid has been given to the amount of about £10,500. Apart from necessary expenses the whole of the income of the Society is expended in publication work.

The inaugural meeting of the Royal Society of Queensland was held on the 8th January, 1884, under the presidency of the late Sir A. C. Gregory. The society was formed "for the furtherance of the natural and applied sciences, especially by means of original research." Shortly after its formation it received an addition to its ranks by the amalgamation with it of the Queensland Philosophical Society, which was started at the time when Queensland became a separate colony. At latest date the members numbered 105; publications issued, 24 volumes; library, 3780 volumes; societies on exchange list, 142. Up to 1910 the total subscriptions reached about £1800.

The present Royal Society of South Australia grew out of the Adelaide Philosophical Society, which was founded in 1853, its object being the discussion of all subjects connected with science, literature and art. Despite this programme, the tendency of the papers was distinctly scientific, or of a practical or industrial nature. With the advent of the late Professor Tate the society became purely scientific. Permission to assume the title of "Royal" was obtained in 1879, the society thenceforward being known as "The Royal Society of South Australia." In 1903 the society was incorporated. In 1912 the number of members was 91. The income for the year 1911-12 was £463, including £226 Government subsidy. In October, 1912, the endowment fund amounted to £2276. Up

to 1912 the society had issued thirty-five volumes of proceedings and six parts of memoirs, exclusive of several individual papers published in earlier years. The exchange list numbers about 150.

The Royal Society of Tasmania, for horticulture, botany, and the advancement of science, dates from 14th October, 1843, although Sir John Franklin had started a scientific society as early as 1838. The names of Captains Ross and Crozier, of H.M.S. *Erebus* and *Terror*, appear in the list of the first corresponding members. The society, which, since 1844, has published annual volumes of proceedings, possesses 139 members, exchanges with 77 kindred bodies, and has a library containing about 2000 volumes.

(b) *Other Scientific Societies.* The Australasian Association for the Advancement of Science, founded in 1888, has its headquarters in Sydney. It meets usually in each State biennially in turn. Its receipts to date were about £13,000, including Government aid to the amount of £4000. The library contains 4000 volumes, valued at £400. Up to date thirteen volumes of proceedings have been issued. The exchange list numbers 250. The Linnean Society of New South Wales, with headquarters in Sydney, was founded in 1875, and possesses a library of 10,000 volumes, valued at £6000. Up to date thirty-six volumes of proceedings have been issued. Exchanges number 188. This society maintains two investigators engaged in research work, and owes its development almost entirely to the benefactions of Sir William Macleay. The British Astronomical Association has a branch in Sydney, and in some of the States the British Medical Association has branches.

The principal scientific society in Western Australia is the Natural History and Science Society of Western Australia. This society has grown out of the Mueller Botanic Society, founded in July, 1897. The objects of the society are the study of natural history and pure science, promoted by periodical meetings and field excursions, the maintenance of a library, and the issue of reports of proceedings. It numbers at present 117 members whose subscriptions form its main source of revenue. Government aid in the past has ranged from £7 to £75 per annum, the subsidy paid in 1912 being £25. Since its establishment the society has issued twenty journals of proceedings. Its publications are exchanged with numerous institutions at home and abroad.

In addition to the societies enumerated above, there are various others in each State devoted to branches of scientific investigation, particulars respecting which are not at present available.

2. **Libraries.**—As far as can be ascertained the total number of libraries in the Commonwealth at the latest available date was about 1500, and the number of books contained therein is estimated at nearly three millions. In each of the capital cities there is a well-equipped Public Library, the institutions in Melbourne and Sydney especially comparing very favourably with similar institutions in other parts of the world. The following statement gives the number of volumes in the Public Library of each city:—

METROPOLITAN PUBLIC LIBRARIES.

City.	Number of Volumes in—			Total.
	Reference Branch.	Ordinary Lending Branch.	Country Lending Branch.	
Sydney ...	229,678	...	11,616	241,294
Melbourne ...	207,261	28,835	...	236,096
Brisbane ...	37,207	...	...	37,207
Adelaide ...	73,557	27,384	...	100,941
Perth ...	90,982	9,109	...	100,091
Hobart ...	18,764	...	...	18,764

The maintenance and control of the lending branch of the Public Library at Sydney were transferred in 1908 to the Municipal Council. At the end of December, 1911, the books numbered 27,273.

The Mitchell Library in Sydney consists of 60,000 volumes and pamphlets, principally relating to Australasia, bequeathed in 1907 by Mr. D. S. Mitchell, together with an endowment of £70,000. The testator stipulated that the regulations of the British Museum were to be adopted as far as practicable, hence the library is the resort of specialists.

The Launceston Mechanics' Institute in Tasmania possesses a library of 27,000 volumes.

The number of libraries in receipt of State or municipal aid, together with the estimated number of books contained therein, is given below for each State:—

SUBSIDISED LIBRARIES AND BOOKS THEREIN.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.
Number of libraries ...	477	525	226	210	297	32
Estimated number of books	925,000	1,078,000	326,000	469,000	214,000	106,000.

The figures in the above table can be taken only as approximations, as in many instances returns were not received from various institutions. The return for New South Wales includes the Public Library and the Sydney Municipal Library. Amongst other important libraries not included, may be enumerated those at the Sydney University and the Australian Museum, which contain 96,000 and 18,000 volumes respectively. There are also 500 libraries, with an estimated total of 145,000 volumes, attached to State Schools.

3. **Museums.**—The Australian Museum in Sydney, founded in 1836, is the oldest institution of its kind in Australia. In addition to possessing a fine collection of the usual objects to be met with in kindred institutions, the Museum contains a very valuable and complete set of specimens of Australian fauna. The cost of construction of the building was £59,000. The number of visitors to the institution in 1911 was 170,000, and the average attendance on week-days 462, and on Sundays 905. The expenditure for 1911 amounted to £9520, of which £6953 was absorbed by salaries and allowances, and £2567 by purchases and miscellaneous. A valuable library containing over 18,000 volumes is attached to the Museum. Representative collections, illustrative of the natural wealth of the country, are to be found in the Agricultural and Forestry Museum, and the Mining and Geological Museum. The latter institution prepares collections of specimens to be used as teaching aids in country schools. The "Nicholson" Museum of Antiquities, the "Macleay" Museum of Natural History, and the Museum of Normal and Morbid Anatomy, connected with the University, and the National Herbarium and Botanical Museum at the Sydney Botanic Gardens, are also accessible to the public. There is a fine Technological Museum in Sydney, with branches in six country centres, the metropolitan institution containing over 109,000 specimens. Valuable research work has been undertaken by the scientific staff in connection with oil and other products of the eucalyptus. The number of visitors at the Technological Museums during 1911 was over 216,000.

The National Museum at Melbourne, devoted to Natural History, Geology, and Ethnology, is located in the Public Library building. The expenditure for specimens, furniture, etc., in 1911 was £500, and salaries and wages £2487. The Industrial and Technological Museum, opened in 1870, contains upwards of 55,000 specimens. There is a fine Museum of Botany and Plant Products in the Melbourne Botanic Gardens. Well equipped museums of mining and geological specimens are established in connection with the Schools of Mines in the chief mining districts.

The Queensland Museum dates from the year 1871, but the present building was opened in January, 1901. Since its inauguration the Government has expended on the institution a sum of £74,105, of which buildings absorbed £17,497, purchases £23,235, and salaries £33,372. The number of visitors during the year was 58,297, of whom 24,956 visited the institution on Sundays. The Queensland Geological Survey Museum has branches in Townsville, opened in 1886, and Brisbane, opened in 1892.

Under the Public Library Act of 1884 the South Australian Institute ceased to exist, and the books contained therein were divided amongst the Museum, Public Library, and Art Gallery of South Australia, and the Adelaide Circulating Library. The Museum was attended by 75,000 visitors in 1911.

The latest available returns shew that the Western Australian Museum contains altogether 49,000 specimens of an estimated value of £63,000. The Museum is housed in the same building as the Art Gallery, and the visitors to the combined institutions during the year averaged 52,000 on week days and 16,000 on Sundays. The expenditure totalled £3628, of which salaries absorbed £2147.

There are two museums in Tasmania—The Tasmanian Museum at Hobart, and the Victoria Museum and Art Gallery at Launceston, both of which contain valuable collections of botanical and mineral products. The Tasmanian Museum received aid from the Government during last year to the extent of £700.

4. Art Galleries.—Information regarding the State collections of objects of art in the various capitals is in some cases very meagre, while the method of presentation does not admit of any detailed comparisons being made. The National Art Gallery of New South Wales originated in the Academy of Art founded in 1871. The contents, which are valued at £138,000, comprise 377 oil paintings, 375 water colours, 523 black and white, 154 statuary and bronzes, and 360 ceramics, works in metal and miscellaneous. During 1911 the average attendance on week days was 587, and on Sundays 2006. The expenditure in 1911 amounted to £5293.

The National Gallery at Melbourne at the end of 1911 contained 538 oil paintings, 3583 objects of statuary, bronzes and ceramics, and 13,920 water-colour drawings, engravings, and photographs. The Gallery is situated in the same building as the Museum and Public Library, the total cost of construction being £291,000. At the end of 1911 the Ballarat Art Gallery contained 219 oil paintings, and 165 water colours, etc., while there are some valuable works of art in the smaller galleries at Bendigo, Geelong, and Warrnambool.

The Art Gallery at Adelaide dates from 1880, when the Government expended £2000 in the purchase of pictures, which were exhibited in the Public Library building in 1882. The liberality of private citizens caused the Gallery to rapidly outgrow the accommodation provided for it in 1889, at the Exhibition Building, and on the receipt of a bequest of £25,000 from the late Sir T. Elder, the Government erected the present building, which was opened in April, 1900. The Gallery also received a bequest of £16,500 in 1903 from the estate of Dr. Morgan Thomas, and of £8000 in 1907 from Mr. David Murray. At the latest available date there were in the Gallery 215 oil paintings, 124 water colours, 163 black and white, 151 engravings and etchings, 22 statuary, and 648 miscellaneous works in metal, etc., the whole being valued at upwards of £47,000. Building and site are valued at upwards of £31,000. Visitors during the year 1911 numbered 92,449.

The foundation stone of the present Art Gallery at Perth in Western Australia was laid in 1901, the building and site being valued at £60,000. The collection comprises 97 oil paintings, 41 water colours, 217 engravings and black and white, 262 statuary, and miscellaneous metal works, etc., of a total value of £15,000.

In Tasmania the Art Gallery at Hobart was opened in 1887. Its present contents consist of 96 paintings and 81 etchings and black and white drawings. Buildings and site are valued at £30,000. The number of visitors during the year on week days averages 62,000, and on Sundays 30,000.

The Art Gallery at Launceston was erected in 1888 at a cost of £5000, and opened on the 2nd April, 1891. Only a small proportion of the contents belong to the Gallery, the bulk of the pictures being obtained on loan. At latest date there were on view 80 oil paintings and 44 water colours valued at £5000. The total value of buildings and site is estimated at £12,100. The average annual attendance is 36,000, and for Sundays 10,000.

5. **State Expenditure on all Forms of Educational Effort.**—The expenditure from the Consolidated Revenue in each State and Territory on all forms of educational and scientific activity during each of the last five financial years was as follows:—

EXPENDITURE ON EDUCATION, SCIENCE, AND ART, 1907-8 to 1911-12.

State or Territory.		1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
		£	£	£	£	£
New South Wales	Total	£ 1,055,197	1,104,077	1,149,422	1,221,175	1,416,015
	Per head	13/4	13/9	13/11	14/11	16/11
Victoria ...	Total	£ 872,655	925,368	953,499	1,003,251	1,142,399
	Per head	13/10	14/5	14/7	15/8	16/9
Queensland ...	Total	£ 399,291	423,080	510,388	503,021	535,082
	Per head	14/6	14/11	17/4	17/-	17/2
South Australia...	Total	£ 210,712	238,376	231,584	275,671	298,610
	Per head	10/7	11/7	11/1	13/9	14/3
Western Australia	Total	£ 219,176	221,377	222,861	251,071	298,530
	Per head	16/6	16/4	16/-	18/6	20/3
Tasmania ...	Total	£ 73,242	81,182	87,603	92,036	95,352
	Per head	8/1	8/10	9/7	9/8	9/11
Northern Territ'y	Total	£ ...	...	...	...	1,477
	Per head	...	...	...	...	9/1
Commonwealth		Total £ 2,830,273	2,993,460	3,155,357	3,346,225	3,787,465
		Per head 13/4	13/10	14/3	15/4	16/7

The comparatively heavy expenditure in Queensland for 1909-10 is due to the inclusion of an expenditure of £70,000 in connection with the establishment of the University.

SECTION XXIII.

PUBLIC JUSTICE.

§ 1. Police.

1. Introductory.—In previous issues of the Year Book a résumé was given of the evolution of the police force in Australia up to the passing of the Police Act of 1862 (25 Vic. No. 16) in New South Wales, but considerations of space preclude its inclusion in the present volume.

In general terms the police forces of Australia may be said to be satisfactory both in regard to physique and intelligence, while as regards methods of prevention and detection of crime it is believed that the system in vogue here compares very favourably with those of the older-settled countries of the world.

2. Strength of Police Force.—The strength of the police force in each State during the five years ended 1911 was as follows. It may be mentioned that the police forces are entirely under State control, but, by arrangement, the Commonwealth Government utilises their services in various directions, such as the collection of Commonwealth electoral rolls, etc.

POLICE FORCES IN THE COMMONWEALTH, 1907 to 1911.

State.	Area of State in Sq. Miles.	1907.	1908.	1909.	1910.	1911.
New South Wales	310,372	2,381	2,417	2,435	2,447	2,487
Victoria...	87,884	1,546	1,552	1,598	1,605	1,640
Queensland	670,500	923	960	966	957	1,011
South Australia	380,070	444	429	442	465	502
Western Australia	975,920	488	492	475	474	481
Tasmania	26,215	226	232	234	234	232
Northern Territory	523,620	...	...	...	...	22
Commonwealth	2,974,581	6,008	6,082	6,150	6,182	6,375

The figures for New South Wales for 1911 are exclusive of sixty-four "black trackers," i.e., natives employed in detection of offenders in outlying districts, and five female searchers. In Queensland there were ninety-five native police. The South Australian returns for 1911 are exclusive of ten "black trackers," and one female searcher. The Northern Territory also had twenty-four "black trackers" in 1911. There are also fifty-one "black trackers" in Western Australia and three female searchers not included in the table.

(i.) *Average Number of Inhabitants to each Police Officer.* The average number of inhabitants to each officer in each State during the same period is shewn below. In considering these figures allowance must, of course, be made for the unequal area and unequal distribution of the population of the various States.

INHABITANTS TO EACH POLICE OFFICER, 1907 to 1911.
(COMMONWEALTH.)

State.	No. of Persons per Sq. Mile, 1911 Census.	Inhabitants to each Police Officer.				
		1907.	1908.	1909.	1910.	1911.
New South Wales	5.31	659	659	659	667	664
Victoria	14.97	807	819	804	799	810
Queensland	0.90	587	575	585	622	608
South Australia	0.46	884	949	900	863	819
Western Australia	0.29	536	543	571	572	596
Tasmania	7.29	814	801	787	816	820
Northern Territory	...	...	...	...	...	151
Commonwealth	1.50	698	703	703	707	704

The above figures naturally shew a great disparity in the relative numbers of the population protected by each police officer in the various States, and also in the relative area of territory to each officer. Western Australia and South Australia exhibit the largest figures in the latter respect, this, of course, being due to the fact that extensive areas in each State are as yet unpeopled by white settlers.

3. Duties of the Police.—In addition to the ordinary employment attaching to their office, the police are called upon to perform many duties which in other countries are carried out by various functionaries. As far as the statistician is concerned, it is found that the expert local knowledge possessed by the police renders their services in the collection of such returns as those relating to the agricultural, pastoral, and manufacturing industries, private schools, etc., more than ordinarily valuable. Then, again, the fact that their services are enlisted by such widely different departments as those dealing with mines, stock, agriculture, elections, registrations of births, deaths, and marriages, forestry, fisheries, explosives, old-age pensions, lunacy, public works, labour, etc., greatly enhances their general alertness by widening the range of their experience. Occasionally the objection is heard in some quarters that these special tasks involve some degree of sacrifice of ordinary routine duties, but that the general intelligence of the Australian police is adequate to the obligation to perform these tasks, besides being most creditable, results in a great saving of the public money.

4. Cost of Police Forces.—The expenditure from Consolidated Revenue on the police forces in each State during the five years 1907 to 1911 is shewn in the following table. Cost of buildings has been excluded from the return.

COST OF POLICE FORCES IN THE COMMONWEALTH, 1907 to 1911.

State.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£
New South Wales	462,804	466,994	472,718	504,146	515,569
Victoria	306,130	306,263	320,831	337,670	345,889
Queensland	202,184	207,043	220,344	244,945	258,538
South Australia	87,374	96,979	98,214	96,769	107,872
Western Australia	125,440	124,518	119,111	120,420	127,458
Tasmania	37,152	39,105	39,740	40,408	41,535
Northern Territory	...	...	...	...	9,708
Commonwealth	1,221,084	1,240,902	1,270,958	1,344,358	1,406,569

The total for New South Wales includes £23,000 payment to Police Superannuation Fund. Similar payments in Victoria and Queensland come to £29,000 and £23,000 respectively, while smaller amounts are included in the returns for other States. The cost per head of the population in each State for the period 1907 to 1911 was as follows:—

COST OF POLICE PER INHABITANT, 1907 to 1911.

(COMMONWEALTH.)

State.	1907.	1908.	1909.	1910.	1911.
	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales ...	5 11	5 11	5 11	6 2	6 2
Victoria ...	4 11	4 10	5 0	5 2	5 1
Queensland ...	7 5	7 6	7 8	8 3	8 4
South Australia ...	4 6	4 11	5 0	4 10	5 2
Western Australia ...	9 7	9 5	8 10	8 11	8 8
Tasmania ...	4 2	4 4	4 4	4 3	4 4
Northern Territory ...	...	...	...	...	58 6
Commonwealth ...	5 11	5 11	5 11	6 2	6 2

The relatively high cost per head in Queensland and Western Australia is due to the fact that there are in those States extensive areas of sparsely settled country, in which mounted patrols have to be maintained.

In view of the small number of its white population and the vast extent of country to be patrolled, the figures for the Northern Territory necessarily shew a very high average.

§ 2. Lower (Magistrates') Courts.

1. **Introductory.**—In considering the criminal returns of the various States, due allowance must be made on account of several factors, such as the relative powers of the courts, both lower and higher, etc. In the case of lower courts, the actual number of laws in each State, the breach of which renders a person liable to fine or imprisonment, must be taken into account. Again, the attitude of the magistracy and police towards certain classes of offences is a factor, for in the case of liquor laws, or laws connected with vagrancy or gaming, the views of magistrates, and instructions issued to the police, may be responsible for considerable variations in the returns. The strength and distribution of the police forces, and the age constitution and distribution of the State's population, also influence the results. In any consideration of criminal returns, due weight should also be given to the prevalence of undetected crime, but information on this point can only be obtained for the State of Victoria. It may be mentioned that each State has its own separate judicial system, the Commonwealth jurisdiction being confined to the High Court of Australia, which is largely a Court of Appeal intermediate to the Privy Council, although it has also original jurisdiction, and the Commonwealth Court of Arbitration and Conciliation. Full particulars regarding the judicial power of the Commonwealth will be found in Chapter III. of the Commonwealth Constitution (see page 28).

2. **Powers of the Magistrates.**—In New South Wales there is no general limit to the powers of the magistrates in regard to offences punished summarily, their authority depending in such case on the statute which creates the offence and gives them jurisdiction. Except in the case of a very few statutes, and excluding cumulative sentences, the power of sentence is limited to six months. Imprisonment in default of payment of fine is regulated by a scale limiting the maximum period according to the sum ordered to be paid, but in no case exceeding twelve months. Actions for debt and damage within certain limits also come within magisterial jurisdiction. In cases of debts, liquidated or unliquidated, the amount recoverable is not exceeding £50 before a court constituted of a stipendiary or police magistrate at certain authorised places, and not exceeding £30 at any other place before a court constituted of a stipendiary or police magistrate or two or more justices of the peace. The amount in actions of damage is limited to £10, but may extend to £30 by consent of parties.

In Victoria the civil jurisdiction of magistrates is restricted to what may be designated ordinary debts, damages for assault, restitution of goods, etc., where the amount in dispute does not exceed £50. No definite limit is fixed to the powers of the magistrates on the criminal side, and for some offences sentences up to two years may be imposed. The proportion of long sentences is, however, comparatively small.

In Queensland, generally speaking, the maximum term of imprisonment which justices can inflict is six months, but in certain exceptional cases, such as offences against sections 233 and 445 of the criminal code (betting-houses and illegally using animals), sentences of twelve months may be imposed. No limit exists as to the extent to which cumulative sentences may be applied, but in practice the term is never very lengthy.

In South Australia, under the Minor Offences Act, magistrates can impose sentences up to six months, and under the Summary Convictions Act, up to three months. The Police Act of 1869 gives power to sentence up to one year, with hard labour, in the case of incorrigible rogues: while under the Quarantine Act of 1877, and the Lottery and Gaming Act of 1875, sentences of two years may be imposed.

Under the Petty Sessions Act of 1867, in Tasmania, any person charged with having committed, or with having aided or abetted in the commission of an offence, in regard to property of a value not exceeding £10, may, on conviction, for a first offence, before two or more justices in Petty Sessions, be imprisoned for any term not exceeding one year, and for a term not exceeding two years for a second or subsequent offence.

3. **Persons Charged at Magistrates' Courts.**—The total number of persons who were charged before magistrates in each State is given below for the five years 1907 to 1911:—

PERSONS CHARGED BEFORE MAGISTRATES IN THE COMMONWEALTH, 1907 to 1911.

State.	1907.	1908.	1909.	1910.	1911.
New South Wales	67,188	66,238	64,502	73,960	75,114
Victoria	60,687	58,778	52,658	52,060	44,526
Queensland	18,621	19,687	19,824	22,104	25,482
South Australia	6,347	6,589	7,332	8,328	8,435
Western Australia	13,968	12,685	12,961	13,260	13,862
Tasmania	6,258	7,048	6,831	7,079	6,597
Northern Territory...	...	...	...	...	92
Commonwealth	173,064	171,020	164,108	176,791	174,108

The considerable falling off in the returns for Victoria during 1911, was due in large measure to the decline in summons cases under the Education Act, the figures for 1911 being 4695, as compared with 12,317 in the preceding year.

The figures given in the tabulation above include, of course, a number of people who were wrongly charged, and statistically are not of great importance. The actual number of convictions in connection with the persons who appeared before the lower courts in each year of the period 1907 to 1911 is, therefore, given hereunder. A separate line is added shewing the committals to higher courts.

CONVICTIONS AND COMMITTALS AT MAGISTRATES' COURTS, 1907 to 1911.
(COMMONWEALTH.)

State.			1907.	1908.	1909.	1910.	1911.
New South Wales	...	{ Convictions	58,103	57,630	55,767	63,671	65,058
		{ Committals	1,130	1,015	1,081	1,176	1,178
Victoria	...	{ Convictions	46,731	43,705	38,801	38,555	31,564
		{ Committals	561	577	580	551	564
Queensland	...	{ Convictions	16,056	17,710	17,584	19,805	23,072
		{ Committals	464	417	442	455	529
South Australia...	...	{ Convictions	5,352	5,664	6,324	7,229	7,303
		{ Committals	105	89	111	117	99
Western Australia	...	{ Convictions	11,803	10,695	10,910	11,433	11,936
		{ Committals	193	187	177	192	204
Tasmania	...	{ Convictions	5,334	5,903	5,930	6,250	5,756
		{ Committals	46	63	44	48	57
Northern Territory	...	{ Convictions	...	...	...	...	75
		{ Committals	...	...	...	...	...
Commonwealth	...	{ Convictions	143,879	141,307	135,316	146,943	144,764
		{ Committals	2,499	2,348	2,435	2,539	2,631

In connection with the variations in convictions at magistrates' courts, it may be noted that deductions in regard to the prevalence of lawlessness based on the totals alone must be largely qualified by several considerations. For example, as previously stated, the passing of new legislation may result in a sudden addition to the crop of convictions, which would not necessarily imply a corresponding growth in lawlessness. Further, the activity of the police in regard to the strict compliance with certain legislation, such as that dealing with Sunday observance, food standards, liquor trade, etc., may cause considerable variations in the returns. Hence references to the spread or otherwise of crime should more correctly depend on a consideration of the convictions for serious crime at the lower courts, and committals to, and convictions at, superior courts.

4. Convictions for Serious Crime.—While the figures given in the preceding table refer to the entire body of convictions, the fact must not be lost sight of that they include a large proportion of offences of a technical nature, many of them unwittingly committed, against various Acts of Parliaments. Cases of drunkenness and minor breaches of good order which, if they can be said to come within the category of crime at all, at least do so in a very different sense to some other offences, also help to swell the list. The following table has, therefore, been prepared for the purpose of shewing the convictions at magistrates' courts for what may be regarded as the more serious offences, i.e., against the person and property, either separately or conjointly, and forgery and offences against the currency:—

CONVICTIONS FOR SERIOUS CRIMES AT MAGISTRATES' COURTS, 1907 to 1911.
(COMMONWEALTH.)

State.	1907.	1908.	1909.	1910.	1911.
New South Wales ...	4,799	4,779	4,764	5,224	5,075
Victoria ...	2,672	2,794	2,626	2,673	2,362
Queensland ...	1,334	1,433	1,526	1,479	1,540
South Australia ...	499	540	513	487	488
Western Australia ...	1,301	1,143	1,074	996	1,025
Tasmania ...	438	575	548	609	557
Northern Territory ...	...	...	...	...	6
Commonwealth ...	11,043	11,264	11,051	11,468	11,053

Owing to a reclassification adopted by Queensland in 1907, a large number of offences have been transferred from the class "Offences against the Person" to "Offences against Good Order," hence the falling-off shewn in that State since 1906.

Compared with the population the above figures give the following results per 10,000 inhabitants:—

CONVICTIONS FOR SERIOUS CRIME PER 10,000 INHABITANTS, 1907 to 1911.
(COMMONWEALTH.)

State.	1907.	1908.	1909.	1910.	1911.
New South Wales ...	31.0	30.2	29.7	32.0	30.7
Victoria ...	21.6	22.2	20.4	20.8	17.8
Queensland ...	24.8	26.1	27.0	25.0	25.0
South Australia ...	12.9	13.6	12.5	12.1	11.9
Western Australia ...	49.6	43.1	39.6	36.7	35.7
Tasmania ...	24.4	31.6	29.8	31.9	29.3
Northern Territory ...	...	...	...	...	18.1
Commonwealth ...	26.6	26.6	25.6	26.2	24.6

5. Decrease in Crime.—The figures quoted in the preceding table show that there has been a considerable decrease in crime during the last five years, while if the comparison be carried back to 1881 the position is seen to be still more satisfactory. The rate of convictions at magistrates' courts per 10,000 of the population is given below for each of the years 1881, 1891, 1901, and 1911. Only the more serious offences, particularised in the preceding paragraph, have been taken into consideration.

RATE OF CONVICTIONS FOR SERIOUS CRIME IN THE COMMONWEALTH.

Year.	Convictions per 10,000 Persons.				
1881	69.3
1891	44.8
1901	29.1
1911	24.6

6. Need of Statistic of Distinct Persons.—The figures already quoted refer to total convictions, and in respect of individuals necessarily involve a considerable amount of duplication, especially in minor offences, such as drunkenness, petty larcenies, etc., in which the same offender appears before the court many times in the course of the year. In a few of the States it is possible to obtain the number of distinct persons arrested, but there are no means of arriving at the total distinct persons convicted before the magistrates in

any State. The forms submitted to and adopted by the Conference of Statisticians in 1906 provided for information as to separate persons convicted, irrespective of whether they were arrested or summoned, but the information is not yet sufficiently complete to be of value for statistical comparisons.

7. Causes of Decrease in Crime.—The statistics given shew that there has been a considerable decrease in crime throughout Australia. The results so far quoted are restricted entirely to the lower or magistrates' courts. There has also been a gratifying decrease in regard to offences tried at the higher courts, as will be seen later.

Attempts have been made to account for this decline: *e.g.*, advance in education, enlightened penological methods, etc. Much depends upon what is meant by education. Many classed in census statistics as "educated" can barely read and write. In this connection, moreover, it ought not to be forgotten that collaterally with the introduction of ordinary intellectual education certain people have departed from their pristine virtues. The deterrent effect of punishment, in respect of many offences, notably drunkenness, vagrancy, petty larcenies, etc., appears to be almost negligible. In general, punishment has declined in brutality and severity, and has improved in respect of being based to a greater extent upon a scientific penological system, though in this latter respect there is yet much to be desired. Recent advances in penological methods will be referred to in a subsequent section. Here it will be sufficient to remark that under the old régime, a prisoner on completion of a sentence in gaol was simply turned adrift on society, and in many cases sought his criminal friends, and speedily qualified for readmission to the penitentiary. Frequently he was goaded to this by mistaken zeal on the part of the police, who took pains to inform employers of the fact of a man having served a sentence in gaol. For a long time any assistance to discharged prisoners was in the hands of private organisations, such as the Salvation Army Prison Gate Brigade, but in some of the States, and notably in New South Wales, the authorities themselves look after the welfare of discharged prisoners in the way of finding work, providing tools, etc.

Improvements in the means of communication and identification have been responsible for some of the falling-off noticeable in the criminal returns, the introduction of the Bertillon system having contributed to certainty of identification. In his report for the year 1910 the Inspector-General of Police in New South Wales states that "criminals have a wholesome dread of the finger print system, and I have not the slightest doubt that it is one of the principal causes of the diminution of serious crimes." Part of the improvement may no doubt be referred also to the general amelioration in social conditions that has taken place during the last fifty years.

8. Drunkenness.—The number of cases of drunkenness and the convictions recorded in connection therewith during the period 1907 to 1911 will be found in the following table:—

CASES AND CONVICTIONS—DRUNKENNESS, 1907 to 1911.
(COMMONWEALTH.)

State	1907.		1908.		1909.		1910.		1911.	
	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.	Cases.	Convictions.
New South Wales	28,255	28,109	27,976	27,817	27,495	27,363	27,542	27,380	29,398	29,299
Victoria	14,783	9,151	13,102	6,596	12,436	7,025	12,719	7,272	13,603	7,557
Queensland	9,066	9,002	9,203	9,185	9,109	9,102	10,870	10,849	12,824	12,767
South Australia	2,838	2,735	3,063	3,024	3,481	3,455	4,383	4,323	4,673	4,627
Western Australia	3,591	3,535	3,506	3,441	4,007	3,955	4,550	4,506	4,857	4,808
Tasmania	535	531	543	527	709	690	761	741	756	740
Northern Territory	...	...	...	...	...	...	...	...	34	34
Commonwealth	59,068	53,063	57,393	50,590	57,237	51,590	60,825	55,071	66,145	59,832

The number of convictions is, as might naturally be expected, almost identical with the number of cases. Victoria, however, is an exception, but in this State it is explained that offenders are generally discharged on a first appearance, and no conviction is recorded, a similar procedure being also adopted in the case of those arrested on Saturday and detained in custody till Monday. The logic of excluding these cases from the list of convictions is certainly open to doubt.

The convictions for drunkenness per 10,000 of the population during each of the years from 1907 to 1911 are given hereunder :—

CONVICTIONS FOR DRUNKENNESS PER 10,000, 1907 to 1911.

(COMMONWEALTH.)

State.	1907.	1908.	1909.	1910.	1911.
New South Wales ...	181.3	175.9	170.4	167.7	167.0
Victoria ...	73.9	52.4	54.7	56.7	56.8
Queensland ...	167.0	167.1	161.1	183.4	207.8
South Australia ...	70.9	76.0	84.1	107.7	112.5
Western Australia ...	184.8	129.8	146.0	166.2	167.7
Tasmania ...	29.6	29.0	37.5	38.8	38.9
Northern Territory...	...	...	...	...	102.4
Commonwealth ...	127.7	119.5	119.4	126.0	133.2

The convictions for drunkenness taken by themselves are not an altogether satisfactory test of the relative sobriety of the inhabitants of each State, inasmuch as several important factors must be taken into consideration. The age constitution of the people, for example, is by no means identical in each State, Western Australia having by far the largest proportion of adult males. The avocations of the people affect the result, since persons engaged in strenuous callings are, on the whole, more likely to indulge in alcoholic stimulants than those employed in less arduous ones. The distribution of the population is also a factor, the likelihood of arrest or summons for drunkenness obviously being greater in the more densely populated regions, and lastly, allowance must be made for the attitude of the magistracy, the police, and the public generally in regard to the offence.

It is not unusual to supplement statistics of drunkenness by furnishing also the relative consumption of alcoholic beverages. Deductions drawn therefrom will be very misleading if they fail to take into account also the consumption of non-intoxicating beverages such as tea and coffee, and the general habit of the people. Throughout the greater part of Europe, tea and coffee are consumed but sparingly, while Australia, as is well known, is one of the greatest tea-drinking countries of the world.

The following table shewing the consumption of spirits, wine, and beer per head of the population has, with the exception of the figures relating to the Commonwealth, been compiled from returns prepared by the British Board of Trade. The figures quoted for the Commonwealth refer to the year 1911, and for the other countries mentioned cover the quinquennium 1905-9, this being the latest period for which complete returns are available. Owing to the abolition by the Customs Department of records of interstate trade it is no longer possible to give accurate returns for the separate States.

CONSUMPTION OF ALCOHOLIC BEVERAGES IN VARIOUS COUNTRIES.

Country.	Consumption per Head of Population.			Country.	Consumption per Head of Population.		
	Spirits.	Wine.	Beer.		Spirits.	Wine.	Beer.
	Imp. Galls.	Imp. Galls.	Imp. Galls.		Imp. Galls.	Imp. Galls.	Imp. Galls.
United Kingdom...	0.86	0.27	27.42	Denmark ...	2.29	...	20.50
Commonwealth ...	0.85	0.5	12.37	German Empire	1.48	1.19	23.74
New Zealand ...	0.78	0.15	9.87	Holland ...	1.39	0.35	...
Cape of Good Hope	0.56	1.85	1.56	Belgium ...	1.08	1.04	48.58
Canada ...	0.87	0.10	5.48	France ...	1.33	34.52	7.96
Russia ...	1.15	...	1.15	Switzerland ...	0.77	15.26	15.22
Norway...	0.57	...	4.06	Italy ...	0.43	25.84	0.32
Sweden...	1.33	...	12.80				

9. Treatment of Drunkenness as Crime.—Though the problem of the correct method of dealing with dipsomania is by no means an easy one, it seems fairly clear that the present plan of bringing offenders before magistrates, and subjecting them to the penalty of imprisonment or fine, has little deterrent effect, as the same offenders are constantly reappearing before the courts. Further, the casting of an inebriate into prison, and placing him in his weakened mental state in the company of professional malefactors, doubtless tends to swell the ranks of criminals and certainly tends to lower his self-respect, while examination of the prison records in New South Wales some years ago disclosed the fact that over 40 per cent. of the gaol population had commenced their criminal career with a charge of drunkenness. During the last few years the dangers of moral contamination in this way have been more accurately appreciated, and a system of classification of prisoners has been adopted whereby the petty offender is as far as possible kept from association with the more evilly-disposed. With regard to drunkards, however, the Comptroller of Prisons in New South Wales advocates the entire abandonment of the system of repeated fine or imprisonment in favour of a course of hospital treatment, and this has to some extent been accomplished by the Inebriates Act of 1900 and 1909, under which habitual drunkards may be detained for long periods. The Comptroller-General of Prisons in Queensland states in his report for the year 1907 that "the drunken habit in many cases is merely one of many symptoms which jointly indicate the existence of a graver condition than simple habitual drunkenness."

10. Remedial Treatment of Inebriates.—Legislation has been passed in each State providing for the commitment of inebriates to special Government institutions, but so far New South Wales and Victoria are the only States in which such institutions have been established. The laws in the various States are as follows:—New South Wales, Inebriates Act 1900; Victoria, Inebriates Act 1904; Queensland, Inebriate Institutions Act of 1896; South Australia, Inebriates Act of 1881; Western Australia, Lunacy Act 1903, Pt. iv., Habitual Drunkards; Tasmania, Inebriates Act 1885, Inebriate Hospitals Act 1892. Curative work was first undertaken by the Government of New South Wales in 1907. The institutes are connected with the gaols, and, naturally, custodial measures are still a strong feature in their management; nevertheless the results so far have been encouraging. In Victoria an institute purporting to be wholly remedial was founded in 1907, and up to the end of December, 1910, 341 patients had been admitted. It may be mentioned that there are private retreats in each State, but these are not officially subsidised or inspected.

11. Treatment of Habitual Offenders.—In New South Wales the Habitual Criminal Act of 1905 gives judges the power of declaring a prisoner, after a certain number of sentences, to be an habitual criminal, and as such to be detained until, in the opinion of the authorities, he is fit to be at large. At the end of 1911 there were thirty-nine persons in prison under this Act. The Indeterminate Sentences Act came into force in Victoria in July, 1908, and on the 30th June, 1911, twenty-nine males and seven females were under detention in Pentridge and in the Female Penitentiary, as well as thirteen youths in Castle-maine reformatory prison. Somewhat similar Acts are in force in South Australia and Tasmania. The provisions of the Habitual Criminals Amendment Act of 1907 were put into force in South Australia in 1909, and ten criminals declared to be habitual offenders were in confinement in the Labour Prison at the end of 1910. Legislation of this character has not yet been adopted in Queensland, but the Comptroller-General states that the time is now ripe for its introduction. Naturally it will be some time before the effect of these measures on the prevalence of crime can be estimated. The Comptroller-General of Prisons in New South Wales states, however, that the system has exercised a wholesome deterrent effect on the criminal who is not a prisoner.

In illustration of the need for an Habitual Offenders Act to deal with professional criminals, the following statement culled from the report for 1909 of the Inspector-General of Police in New South Wales will be found of interest. In cases of breaking and entering, thirty-three persons committed 165 offences, or an average of five each. Of the total number, one man committed thirty-two offences, another thirteen, and another twelve. In simple larcenies, 139 persons committed 528 offences, one man being responsible for fifty-two charges, another fifty-six, and another seventeen. Under "burglaries" one man committed five offences; under "false pretences" one man committed nineteen, and another fifteen offences.

12. Treatment of First Offenders.—In all the States and in New Zealand statutes dealing with first offenders have been in force for some years, the dates of passing the Acts being as follows: New South Wales, 1894; Victoria, 1890; Queensland and South Australia, 1887; Western Australia, 1892; Tasmania and New Zealand, 1886. The method of procedure is practically the same in all cases, *i.e.*, with regard to most first offenders the magistrate or judge is empowered to allow the offender to go free on recognisances being entered into for his good behaviour for a certain period. In practice, this humane law has been found to work excellently, very few of those to whom its provisions have been extended having been found to relapse into crime.

13. Children's Courts.—Special courts for the trial of juvenile offenders have been established in New South Wales, Victoria, Western Australia, and New Zealand within the last few years, while Children's Courts, although not under that name, are practically provided for by the State Children's Acts of 1895 and 1900 in South Australia. The object of these Courts is to avoid, as far as possible, the unpleasant surroundings of the ordinary police court. This subject is also dealt with in detail in the section dealing with Public Hygiene.

14. Committals to Superior Courts.—In a previous section it has been pointed out that comparisons of criminality based on a consideration of the total returns from magistrates' courts are somewhat inadequate, seeing that the figures include numbers of cases which are merely technical breaches of laws having in some instances a purely local significance. The committals to higher courts give a better basis of comparison, although even in this connection allowance must be made for the want of uniformity in jurisdiction. The table below gives the number of committals in each year from 1907 to 1911, with the proportion of such committals per 10,000 of the population. The rates are shewn on a separate line.

COMMITTALS TO SUPERIOR COURTS (COMMONWEALTH), 1907 to 1911.

State.				1907.	1908.	1909.	1910.	1911.
New South Wales	...	...	{ No. 1,172 Rate 7.2	1,060 6.7	1,135 7.1	1,233 7.6	1,223 7.4
Victoria	...	...	{ No. 561 Rate 4.5	577 4.6	580 4.5	551 4.3	564 4.2
Queensland	...	...	{ No. 464 Rate 8.6	417 7.6	442 7.8	455 7.7	529 8.6
South Australia	...	...	{ No. 105 Rate 2.7	89 2.2	111 2.7	117 2.9	99 2.4
Western Australia	...	...	{ No. 193 Rate 7.4	187 7.0	177 6.5	192 7.1	204 7.1
Tasmania	...	...	{ No. 51 Rate 2.8	63 3.5	44 2.4	48 2.5	57 3.0
Commonwealth	...	...	{ No. 2,546 Rate 6.0	2,393 5.7	2,489 5.8	2,596 5.9	2,676 6.0

The above figures shew that the rate of serious crime has remained practically constant during the last five years, but if the comparison be carried farther back, it will be found that, in comparison with the earlier years, there has been a considerable improvement. This will be evident from an examination of the following figures, which shew the rate of committals per 10,000 persons in Australia at various periods since 1861:—

RATE OF COMMITTALS IN AUSTRALIA, 1861 to 1911.

Year	1861.	1871.	1881.	1891.	1901.	1911.
Committals per 10,000 inhabitants	22	14	12	11	8	6

The decline in proportion to population since 1861 has therefore been about 73 per cent.

§ 3. Superior Courts.

1. **Convictions at Superior Courts.**—The total number of convictions at superior courts, together with the rate per 10,000 of the population, is shewn below for each of the years 1907 to 1911:—

CONVICTIONS AT SUPERIOR COURTS (COMMONWEALTH), 1907 to 1911.

State.			1907.	1908.	1909.	1910.	1911.
New South Wales	...	{ No. Rate	629 4.0	614 3.9	619 3.9	546 3.3	538 3.3
Victoria	...	{ No. Rate	368 3.0	365 2.9	352 2.7	354 2.7	334 2.5
Queensland	...	{ No. Rate	268 4.6	292 4.8	345 6.1	376 6.4	328 5.3
South Australia	...	{ No. Rate	74 1.9	68 1.7	86 2.1	101 2.5	74 1.8
Western Australia	...	{ No. Rate	176 6.7	106 4.0	87 3.2	95 3.5	98 3.4
Tasmania	...	{ No. Rate	39 2.2	29 1.6	24 1.3	27 1.4	38 2.0
Northern Territory	...	{ No. Rate	... ...	... ...	... ...	... ...	4 12.0
Commonwealth	...	{ No. Rate	1,554 3.7	1,474 3.5	1,513 3.5	1,499 3.4	1,414 3.1

Separate persons included in the above totals for the last three years were returned as 1504, 1494, and 1406 respectively.

In considering the above figures allowance must be made for the various factors enumerated in a preceding paragraph. Only when this is done will the comparatively unenviable pre-eminence of Western Australia in regard to serious crime be explained. Tasmania, it will be noted, shows by far the smallest proportion of serious crime, while the figures available shew that the island State is relatively the smallest consumer of alcoholic beverages. That a definite causal relation exists between the figures shewn by the respective tables is not, however, obvious. The figures for the Northern Territory are, of course, somewhat abnormal.

2. Offences for which Convictions were Recorded at Superior Courts.—In the following table will be found a classification of the principal offences for which persons were convicted at the higher courts during each year of the period 1907 to 1911. Owing to lack of uniformity in the presentation of the returns for the several States the information is confined to the chief offences against the person only. The figures quoted refer to convictions in the Commonwealth during the period dealt with.

CONVICTIONS FOR SERIOUS CRIME, SUPERIOR COURTS, 1907 to 1911.
(COMMONWEALTH.)

Offences	1907.	1908.	1909.	1910.	1911.
Murder and attempts at	26	26	24	31	18
Manslaughter	19	20	21	15	15
Rape and crimes of lust	90	60	59	77	97
Other offences against the person	255	278	260	250	235

While there was a slight increase in the returns relating to crimes of lust the figures generally evidence great improvement. The general total of convictions for all offences against the person shews a decline since 1901 of over 15 per cent.

3. Capital Punishment.—The table below gives the number of executions in each State during the period 1907 to 1911:—

EXECUTIONS (COMMONWEALTH), 1907 to 1911.

State.	1907.	1908.	1909.	1910.	1911.
New South Wales	3	...	...	...	...
Victoria	...	1	...	...	...
Queensland	1	...	2	1	...
South Australia	...	1	...	3	...
Western Australia	1	2	1	1	2
Tasmania	...	...	...	...	...
Commonwealth	5	4	3	5	2

In the early days of the history of Australia the penalty of death was attached to a large number of offences, many of which at the present time would be dealt with in the lower or magistrates' courts. With the growth of settlement, and the general amelioration in social and moral conditions, the list was, however, considerably curtailed, and the existing tendency is practically to restrict death sentences to cases of murder. It may be remarked that in cases of rape, which is a capital offence in some of the Australian States, the penalty has been but sparingly inflicted during the last few years. Juries are

reputed to be loth to convict on this charge, owing to the uncertainty whether sentence of death will be pronounced.

During the period 1861 to 1880 the average number of executions in the Commonwealth was nine, from 1881 to 1900 the average was six, while for the period 1901 to 1910 the figure stood at five.

§ 4. Prisons.

1. **Prison Accommodation and Prisoners in Gaol.**—The table below shews the number of prisons in each State and the accommodation therein at the end of 1911:—

PRISONS AND PRISON ACCOMMODATION (COMMONWEALTH), 1911.

State.	Number of Prisons.	Accommodation in—		Prisoners at End of Year.
		Separate Cells.	Wards.	
New South Wales	31	2,275	*	1,173
Victoria	18	1,487	727	797
Queensland	12	561	416	514
South Australia	12	812	225	229
Western Australia	26	688	65	323
Tasmania	2	260	104	65
Northern Territory	3	18	54	*
Commonwealth...	104	6,101		3,101

* Not available.

Complete returns regarding the three prisons in the Northern Territory are not available. At the Darwin gaol there were 40 prisoners, including aborigines, in confinement at the end of 1911.

The number of prisoners in gaol, exclusive of debtors, at the 31st December in each of the years 1907 to 1911, is given below. A separate line is added in each instance shewing the proportion per 10,000 of the population.

PRISONERS IN GAOL (COMMONWEALTH)* 1907 to 1911.

State.		1907.	1908.	1909.	1910.	1911.
New South Wales	{ Number	1,437	1,417	1,333	1,235	1,173
	{ Proportion	9.3	9.0	8.3	7.6	7.1
Victoria	{ Number	916	875	844	859	797
	{ Proportion	7.4	7.0	6.5	6.7	6.0
Queensland	{ Number	501	493	516	527	514
	{ Proportion	9.3	9.0	9.1	8.9	8.4
South Australia	{ Number	255	247	276	269	224
	{ Proportion	6.6	6.2	6.7	6.7	5.4
Western Australia	{ Number	502	351	365	311	323
	{ Proportion	19.1	13.2	13.5	11.5	11.3
Tasmania	{ Number	89	96	81	72	65
	{ Proportion	5.0	5.3	4.4	3.8	3.4
Commonwealth	{ Number	3,700	3,479	3,415	3,273	3,096
	{ Proportion	8.9	8.2	7.9	7.5	6.9

* Exclusive of Northern Territory.

From the preceding table it will be seen that the proportion to population of prisoners in gaol has fallen considerably during the last five years, while, if the comparison be carried farther back, the position is seen to be still more favourable, the prisoners in gaol in the Commonwealth numbering as much as 16 per 10,000 of the population in 1891.

2. Improvement of Penological Methods.—During recent years Australia, in common with most other civilised countries, has introduced considerable modifications and improvements in methods of prison management. Under the old régime punishment partook more or less of the character of reprisal for wrongdoing, and the idea of constituting the prison as a reformatory agency was in the background. But of recent years there has been an earnest attempt at effecting a moral reformation in the unfortunates who lapse into crime. This aspect of prison management has been specially prominent in New South Wales. A short account of the re-organisation of the prison system in this State appears in preceding Year Books (see No. V., p. 922), but consideration of space precludes its repetition here. At the present time it is found that good results have followed the principles of scientific classification and restricted association of prisoners, together with the provision of separate institutions for the treatment of inebriates. It is proposed to introduce in New South Wales the system of carrying on afforestation by prison labour, somewhat after the manner of that in vogue for several years in New Zealand, and in 1911 a site near Tuncurry, on the Manning River, was selected for the purpose of initiating the scheme. That there is some connection between mental and physical health and crime is proved by the condition in which many persons are received into gaol. In a large number of instances prisoners are found to be suffering from contagious diseases. Under the Prisoners Detention Act such persons may be kept in gaol until cured, but unfortunately the provisions of the Act do not apply to short sentenced prisoners detained in lieu of paying fines, many of whom have been known to be afflicted with disease.

In 1902 the system of finger-print identification of criminals was introduced, and by the year 1903 bureaux had been established in the various States for the exchange of records. Very successful results have attended the introduction of the system.

Space will not permit of more than a passing reference to the improvements brought about in prison management in the other States. In Victoria there is an excellent system of classification and allocation of prisoners to different gaols, while at the important penal establishment at Pentridge a careful segregation into no less than five distinct classes is carried out. In common with the other States the latest humane methods of accommodation and prison treatment have for some time been employed.

Queensland prisons have been considerably modernised during the last few years. The prison for females at Brisbane has been built on the radiating plan, and embodies the latest ideas in penological methods. Classification of prisoners has been fully carried out in the male and female divisions of Brisbane prison, and at the Stewart's Creek penal establishment. The construction of the buildings does not, however, permit of the plan being adopted in its entirety in all Queensland prisons. It is stated by the Comptroller-General of Prisons that the classification adopted has already resulted in a decrease in the total number of female prisoners received.

Unusual circumstances have combined to keep crime at a low point in South Australia. In the first place there was never any transportation of criminals to the State, while in the earlier years of its history South Australian lawbreakers were transported elsewhere. The present system was drafted mainly on English and European lines by

the late W. R. Boothby, C.M.G., and under his directions and that of his successor has been found to work admirably. Excellent work for the benefit and assistance of discharged prisoners is performed by the Prisoners' Aid Association.

A Royal Commission in 1911 recommended the adoption of various reforms in connection with the prison system of Western Australia. The bulk of these have been carried out, and include, amongst other things, an extension of the principle of separate treatment, improvement in prisoners' dietary scale, more satisfactory arrangements in regard to remission of sentences, and improvements in regard to hours of labour, leave of absence, etc., for the staff.

§ 5. Civil Courts.

1. **Lower Courts.**—The transactions of the lower courts on the civil side during each of the last five years are given in the table hereunder. As pointed out previously, the jurisdiction of the courts is by no means uniform in the various States. The figures, however, possess a certain value as indicating that, in comparison with other years, resort to litigation is on the decline in Australia.

LOWER COURTS.—CIVIL CASES, COMMONWEALTH, 1907 to 1911.

State.			1907.	1908.	1909.	1910.	1911.
New South Wales	...	{ Cases No.	26,548	30,472	32,637	30,059	29,570
		{ Amount £	63,350	83,372	87,432	77,700	74,461
Victoria	...	{ Cases No.	26,255	32,005	36,894	29,902	28,575
		{ Amount £	123,732	157,334	162,393	146,284	129,172
Queensland	...	{ Cases No.	10,304	12,016	12,244	11,951	12,511
		{ Amount £	35,576	42,863	43,363	45,432	48,374
South Australia	...	{ Cases No.	11,737	13,068	13,627	13,845	14,996
		{ Amount £	31,804	39,627	41,811	45,380	51,282
Western Australia	...	{ Cases No.	9,930	10,570	10,681	9,598	9,773
		{ Amount £	57,000	59,863	50,261	42,636	43,413
Tasmania	...	{ Cases No.	3,568	4,120	4,868	3,620	5,189
		{ Amount £	19,574	25,717	30,855	29,199	33,601
Commonwealth	...	{ Cases No.	88,342	102,251	110,951	98,975	100,614
		{ Amount £	331,036	408,776	416,115	386,631	380,303

The figures just given represent the returns from Petty Sessions Courts in New South Wales and Victoria, the Petty Debts Cases in Queensland, the Local Courts of South Australia and Western Australia, and the Court of Requests in Tasmania.

2. **Superior Courts.**—In the next table will be found the transactions on the civil side in the Superior Courts during each of the years 1907 to 1911.

The New South Wales returns are to some extent defective, as the figures quoted for amount of judgments include, in the case of the Common Law jurisdiction of the Supreme Court, the total judgments signed, while in the case of the other States the figures refer to sums actually adjudged after trial. For New South Wales, also, the transactions of

district courts refer to the total amounts sued for, and not the sums actually awarded after trial. Statistically the chief importance of the table consists in the fact that it shews a marked decline in litigiousness in Australia.

SUPERIOR COURTS.—CIVIL CASES, 1907 to 1911.

(COMMONWEALTH.)

State.			1907.	1908	1909.	1910.	1911.
New South Wales	...	{ Causes No. Amount £	652 267,830	694 356,210	800 397,681	519 269,518	729 369,145
Victoria	...	{ Causes No. Amount £	694 46,070	783 77,081	733 59,785	711 53,180	561 54,552
Queensland	...	{ Causes No. Amount £	129 8,845	148 11,574	142 40,964	138 18,336	119 12,208
South Australia...	...	{ Causes No. Amount £	29 8,986	27 5,378	34 14,081	23 799	29 13,195
Western Australia	...	{ Causes No. Amount £	541 67,946	449 63,649	414 60,537	342 39,721	423 90,078
Tasmania	...	{ Causes No. Amount £	193 7,235	185 10,433	257 8,487	210 11,879	110 7,810
Commonwealth	...	{ Causes No. Amount £	2,238 406,912	2,286 524,325	2,380 581,535	1,943 393,433	1,971 545,988

3. **Divorces and Judicial Separations.**—The number of divorces and judicial separations in each State during the period 1907 to 1911 is shewn below :—

DIVORCES AND JUDICIAL SEPARATIONS, 1907 to 1911.

(COMMONWEALTH.)

State.	1907.		1908		1909.		1910.		1911.	
	Divorces.	Judicial Separations	Divorces.	Judicial Separations	Divorces.	Judicial Separations	Divorces.	Judicial Separations	Divorces.	Judicial Separations
New South Wales	152	18	206	12	287	14	257	7	200	10
Victoria	134	...	151	1	138	1	141	...	214	...
Queensland	12	1	11	2	16	...	21	...	27	1
South Australia	11	...	8	...	12	1	3	1	20	...
Western Australia	16	...	19	...	13	1	27	1	30	2
Tasmania	8	...	7	...	12	1	5	1	5	1
Commonwealth	333	19	402	15	478	18	454	10	496	14

The average annual number of divorces and judicial separations in the Commonwealth at decennial periods from 1871 to 1901 is given hereunder :—

DIVORCES AND JUDICIAL SEPARATIONS, 1871 to 1910.

	1871-1880.	1881-90.	1891-1900.	1901-10.
Commonwealth ...	29	70	358	401

The bulk of the divorces and judicial separations refer, as the table shews, to New South Wales and Victoria, the Acts of 1892 and 1889 in the respective States making the separation of the marriage tie comparatively easy. In some statistical works it is customary to compare the divorces in any year with the marriages in the same year. The comparison is, however, quite valueless, as there is no necessary connection between the figures.

4. **Probates.**—The number of probates and letters of administration granted, together with the value of the estates concerned, is shewn below for each State for the period 1907 to 1911:—

PROBATES AND LETTERS OF ADMINISTRATION, COMMONWEALTH, 1907 to 1911

State.		1907.	1908.	1909.	1910.	1911.
New South Wales ...	{ Number	3,084	3,094	3,185	3,396	3,589
	{ Value £	7,563,499	7,838,572	11,142,068	8,834,934	13,138,068
Victoria ...	{ Number	4,156	4,845	4,069	4,128	4,614
	{ Value £	6,860,143	7,128,085	6,480,376	7,430,949	8,469,163
Queensland ...	{ Number	1,160	706	679	704	729
	{ Value £	1,670,184	1,376,255	1,508,883	1,652,691	2,409,495
South Australia ...	{ Number	975	1,025	1,115	1,121	1,057
	{ Value £	1,923,954	2,105,351	1,939,509	2,422,519	2,855,089
Western Australia ...	{ Number	433	455	413	492	584
	{ Value £	1,154,126	955,995	939,318	868,638	844,151
Tasmania ...	{ Number	414	346	361	375	399
	{ Value £	841,227	1,023,629	722,011	797,439	596,870
Commonwealth ...	{ Number	10,222	9,971	9,822	10,156	10,972
	{ Value £	20,013,133	20,427,887	22,732,165	22,007,170	28,312,836

As may naturally be expected, the figures in the above table giving the value of property left each year, shew considerable variations.

5. **Bankruptcies.**—The returns in bankruptcy during each of the last five years are given hereunder.

For several reasons comparisons drawn from the figures in the following table are of little value. In the first place, the statements of assets and liabilities are notably unsatisfactory, particularly in regard to the former. Then, again, there is wide dissimilarity in regard to the laws in force in the various States and the method of procedure thereunder in connection with bankruptcy. Further, there are no means of knowing how many persons in each State who were in a bankrupt condition made private arrangements with their creditors either personally or by intervention of a solicitor. The figures quoted in the table exclude the private arrangements in Victoria and South Australia, and the liquidations in Queensland and Tasmania.

BANKRUPTCIES, COMMONWEALTH, 1907 to 1911.

State.		1907.	1908.	1909.	1910.	1911.
New South Wales ...	(Number	333	356	381	352	331
	Liabilities £	219,669	322,839	169,169	176,088	109,859
	Assets £	152,454	185,507	82,563	119,377	49,390
Victoria ...	(Number	448	514	370	359	306
	Liabilities £	196,879	179,050	129,627	132,841	112,748
	Assets £	53,849	62,998	98,041	54,381	55,374
Queensland ...	(Number	236	903	323	214	227
	Liabilities £	42,348	70,064	63,321	44,475	41,261
	Assets £	8,475	10,031	34,541	12,691	9,286
South Australia ...	(Number	99	105	108	76	106
	Liabilities £	59,681	142,450	64,775	77,471	75,347
	Assets £	33,029	92,719	42,340	44,195	47,314
Western Australia ...	(Number	113	100	86	79	75
	Liabilities £	48,927	49,485	31,791	30,967	24,150
	Assets £	29,174	17,423	19,252	14,169	9,600
Tasmania ...	(Number	7	1	5	1	2
	Liabilities £	7,529	...	3,903	29,368	7,066
	Assets £	1,756	...	954	68,183	5,654
Northern Territory	(Number	...	...	...	...	1
	Liabilities £	...	...	...	...	348
	Assets £	...	...	...	...	66
Commonwealth	(Number	1,236	1,379	1,273	1,081	1,048
	Liabilities £	575,033	763,899	461,586	491,210	370,279
	Assets £	278,737	368,678	277,691	312,996	176,684

6. **High Court of Australia.**—Under the provisions of section 71 of the Commonwealth Constitution Act, the judicial power of the Commonwealth is vested in a Federal Supreme Court, called the High Court of Australia, and in such other courts as the Parliament creates or invests with federal jurisdiction. The Federal High Court possesses both original and appellate jurisdiction, but so far its activities have been confined principally to the latter form. The powers of the court are defined in Chapter III. of the Constitution Act and in the Judiciary Acts of 1903, 1906, 1907, and 1910. At present the court consists of a Chief Justice and six other judges. Sittings of the court are held in the capitals of the various States as occasion may require. The following statement shews the transactions of the High Court for the quinquennium 1907-11:—

COMMONWEALTH HIGH COURT TRANSACTIONS, 1907 to 1911.

Items.	1907.	1908.	1909.	1910.	1911.
I. ORIGINAL JURISDICTION.					
Number of writs issued	38	30	27	28	39
Number of causes entered for trial	11	8	4	5	7
Verdicts for plaintiffs	7	4	3	1	4
Verdicts for defendants	4	5	1	2	3
Otherwise disposed of	17	11	17	23	20
Amount of judgments	£1,092	£1,058	£182	£2,040	£138
II. APPELLATE JURISDICTION.					
Number of appeals set down for hearing	72	87	76	51	64
Number allowed	34	31	40	34	32
Number dismissed	30	36	29	14	23
Otherwise disposed of	8	20	7	3	9
III. AMOUNT OF FEES COLLECTED.					
Amount in each year...	£523	£558	£505	£437	£493

§ 6. Cost of Administration of Justice.

The table below shews the expenditure from Consolidated Revenue during each of the last five years in connection with the administration of justice in each of the States. Expenditure on police and prisons has been separately shewn. With regard to the figures quoted for "other" expenditure, a slight allowance has to be made for the fact that some extraneous expenditure has been included which it was found impossible to disentangle from the total, but the amount is in no instance large. Cost of buildings has been excluded from the return.

EXPENDITURE ON JUSTICE, COMMONWEALTH. 1907 to 1911.

State.			1907.	1908.	1909.	1910.	1911.
			£	£	£	£	£
New South Wales	{	Police	462,804	466,994	472,718	504,146	515,569
		Gaols	83,962	84,129	79,814	78,932	81,473
		Other	244,092	242,796	245,024	241,510	260,217
Victoria ...	{	Police	306,130	306,263	320,831	337,670	345,889
		Gaols	49,866	49,025	49,869	48,714	50,822
		Other	122,251	135,248	147,146	160,627	162,453
Queensland ...	{	Police	202,184	207,043	220,344	244,945	258,538
		Gaols	23,558	23,797	24,174	25,086	28,257
		Other	85,234	85,804	99,914	104,739	109,507
South Australia ...	{	Police	87,374	96,979	98,214	96,771	107,872
		Gaols	15,535	15,981	16,841	17,060	17,678
		Other	29,169	30,884	33,662	34,412	37,433
Western Australia	{	Police	125,440	124,518	119,111	120,420	127,458
		Gaols	32,206	32,638	28,536	27,228	23,755
		Other	61,533	69,761	66,072	69,772	78,022
Tasmania ...	{	Police	37,152	39,105	39,740	40,331	41,535
		Gaols	5,465	5,795	5,698	5,466	5,320
		Other	18,610	16,901	14,511	11,513	14,688
Northern Territory	{	Police	...	...	...	...	9,708
		Gaols	...	...	...	...	2,247
		Other	...	...	...	...	555
Commonwealth ...	{	Police	1,221,084	1,240,902	1,270,958	1,344,283	1,406,569
		Gaols	210,592	211,365	204,932	202,436	209,552
		Other	560,889	581,394	606,329	622,573	662,875

With the exception of that of the Northern Territory, the expenditure shewn in the foregoing table is that incurred by the State Governments only, and does not include expenditure in connection with the Federal High Court, which is shewn below for the period 1907-8 to 1911-12:—

EXPENDITURE OF FEDERAL HIGH COURT, 1907-8 to 1911-12.

Year.		Amount.	Year.		Amount.
		£			£
1907-8	...	23,230	1910-11	...	25,850
1908-9	...	24,037	1911-12	...	26,320
1909-10	...	23,677			

For the purposes of comparison the figures in the first table above have been reduced to a population basis, and the results are given in the table hereunder:—

EXPENDITURE ON JUSTICE PER INHABITANT, COMMONWEALTH, 1907 to 1911.

State.				1907.	1908.	1909.	1910.	1911.
				s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales	...	...	{ Police	5 9	5 11	5 11	6 2	6 3
			{ Gaols	1 1	1 1	1 0	1 0	0 11
			{ Other	3 1	3 1	3 1	2 11	3 2
Victoria	...	...	{ Police	4 11	4 10	4 11	5 3	5 2
			{ Gaols	0 9	0 9	0 9	0 9	0 9
			{ Other	2 0	2 2	2 3	2 6	2 5
Queensland	...	...	{ Police	7 6	7 6	7 10	8 3	8 2
			{ Gaols	0 10	0 10	0 10	0 10	0 11
			{ Other	3 2	3 1	3 6	3 6	3 7
South Australia	...	...	{ Police	4 6	4 11	4 9	4 10	5 3
			{ Gaols	0 10	0 10	0 10	0 10	0 10
			{ Other	1 6	1 7	1 8	1 9	1 9
Western Australia	...	...	{ Police	9 7	9 5	8 10	8 11	8 11
			{ Gaols	2 6	2 6	2 2	2 1	1 9
			{ Other	4 8	5 3	4 10	5 2	5 5
Tasmania	...	...	{ Police	4 2	4 4	4 4	4 3	4 4
			{ Gaols	0 7	0 8	0 7	0 7	0 7
			{ Other	2 1	1 10	1 7	1 2	1 6
Northern Territory	...	...	{ Police	...	...	...	...	58 6
			{ Gaols	...	...	...	...	13 6
			{ Other	...	...	...	...	3 4
Commonwealth	...	...	{ Police	5 9	5 10	5 11	6 2	6 3
			{ Gaols	1 0	1 0	0 11	0 11	1 0
			{ Other	2 8	2 9	2 10	2 10	2 11

Owing to the smallness of the white population, large area to be policed, and cost of supplies, transport, etc., the figures for the Northern Territory must necessarily appear somewhat abnormal.

The total expenditure in the Commonwealth in connection with the administration of justice has risen from ten shillings per inhabitant in 1901 to ten shillings and twopence in 1911. Police expenditure has increased by about sixpence per head, the average for gaols is about twopence per head less, while the expenditure on courts and the remaining machinery of justice has also fallen by twopence per head, during the same period.

SECTION XXIV.

PUBLIC BENEVOLENCE.

§ 1. Introductory.

1. **General.**—Charity and charitable effort in Australia may be classified under three headings, viz.:—(a) State; (b) public; (c) private. To the first belong all institutions wholly provided for by the State, such as the principal lunatic asylums in the various States, the Government hospitals in Western Australia, and the Government asylums for infirm in New South Wales. The second class comprises public institutions of two kinds, viz.:—(i.) Institutions partially subsidised by the State or State endowed, but receiving also private aid, and (ii.) those wholly dependent upon private aid. To the former division belong such institutions as the Melbourne and other large metropolitan hospitals. In the latter are included institutions established and endowed by individuals for the benefit of the needy generally. All charitable movements of a private or special character are included in the third group.

A more or less accurate statistical account is possible in classes (a) and (b), but in regard to (c) complete tabulation is, for obvious reasons, impossible. Moreover, public response to special appeals, and summary relief in kind, cannot be statistically recorded. Hospitals, orphanages, homes, benevolent asylums, etc., naturally attract the largest share of charitable aid. There are, nevertheless, numerous other and minor charities which mark the course and measure the amount of a considerable volume of private beneficence. In institutions which receive Government aid, management and finance are usually relegated to executive bodies, elected ordinarily on a democratic basis.

The distribution of wealth in the Australian Commonwealth, and the generally favourable conditions, as regards scope for the exercise of natural ability, operate to prevent the development of a permanent pauper class, and at the same time lessen in a dual way the burden of charity. This latter is brought about by the increase, on the one hand, of the number of people whose prosperity enables them to relieve the indigent and unfortunate, and by the reduction, on the other, of the number who need assistance. Enactments of State Legislatures have decreed short hours and a liberal holiday allowance for large numbers of persons engaged in industrial and other pursuits, and, even in occupations not covered by Act of Parliament, the general conditions of employment often provide a considerable amount of leisure. This, coupled with an equable climate, enables the community to spend much of its time in the open air, with resultant advantages to its physique and general health. No poor-rate is levied in Australia, and Government aid without return is required only for the aged and disabled. Moreover, although Old Age Pensions are paid by the Commonwealth, the payments are looked upon rather in the light of a citizen's right than as a charity. Reference to the Old Age Pensions will be found in § 3, Miscellaneous, chap. xxxiv.

To meet temporary conditions, or rather, what ought to be temporary conditions, various relief works have been started from time to time, in which the able-bodied who may be forced to seek official relief are required to make some return for the assistance afforded. In the past, attempts to relieve the unemployed have led to large expenditures, but at the present time the entire scheme of such relief is on an altogether more satisfactory footing.

In each of the States there are Government asylums for the care of the insane, and the condition of these unfortunates has been steadily ameliorated by the general advance in psychiatry.

Young children deprived of parental training and control are cared for and educated in "orphanages" and "industrial schools," and those who have been guilty of some specific offence, or who are beyond adequate parental control, are committed to "reformatories."

In common with other civilised communities, relief funds have from time to time been organised for famine-stricken territories (*e.g.*, China, India, etc.), or for places where plague, flood, fire, or earthquake has shewn the need of urgent relief. Statistical information in regard to this form of charity is not, however, available. It may be mentioned that the daily Press frequently accepts the duties of collectorship in charity appeals.

2. Charity Reforms.—The evident overlapping of charitable effort has on various occasions led to discussion regarding methods of collection and distribution. The great desideratum in charity organisation is that the available aid should be relegated solely to the relief of distress and suffering. The true interests of the sick poor would thus be conserved, and the real intention of the donors fulfilled. As a result of greater public attention, there has sprung up in Australia a desire for improved administration. In this connection, an important conference of representatives of charitable associations was held in Melbourne in September, 1907, with the object of systematically digesting the experiences of the committees of management of the various hospitals and kindred institutions. These obtain their revenue from State and municipal subsidies, from proceeds of concerts, entertainments, etc., from organised public collection, from private contributions and bequests, and from patients. Some of the institutions also have paid or honorary collectors. As a result of the investigations of this Conference, it was found (a) that institutions of a similar character were competing with each other; (b) that public aid was not effectively dispensed; (c) that public eleemosynary impulse was prejudiced by the circumstance that institutions primarily intended for the poor and needy were being utilised by people who could afford to pay for private relief, particularly in regard to medical or surgical treatment. As an outcome of the Conference, societies to prevent overlapping have been formed, resulting in improved economical collection and distribution of charitable aid, and a better system of using the available accommodation.

Other proposed reforms aim at ascertaining the causes of poverty and crime, and finding the necessary palliative. Increased provision of better houses and workrooms and improved sanitation are advocated, together with more stringent legislative measures to enforce cleanliness and healthy modes of life. Further, Factories Legislation, Health Acts, etc., have enacted provisions for safeguarding dangerous machinery, and permitting only competent persons to be employed thereon.

3. Tabulation of Charities Statistics.—Differences in the organisation of charities prevent uniform tabulation of statistics for all the States, but certain of the larger features of the statistics of benevolence have been combined for the whole Commonwealth. Combinations for the whole of Australia for the five years ended 1911 are given for hospitals, benevolent asylums, orphanages, and hospitals for the insane. Satisfactory tabulation for other charities is not yet possible. Where the combination has been for dissimilar periods the nearest years have been taken.

§ 2. The Larger Charities of Australia.

1. **Hospitals.**—Most of the State capitals have several large and well-equipped hospitals, and there is at least one in every important town. In large centres there are hospitals for consumptives, women, children, infectious diseases, incurables, etc. The number of hospitals in Australia, with the admissions, patients treated, deaths, and expenditure, is shewn in the following table. Only general hospitals are tabulated, since the working of "special" institutions is not properly comparable with those which treat cases of all kinds. In 1909, the figures for assisted hospitals in Western Australia were included for the first time, not having been available for previous years.

HOSPITALS IN THE COMMONWEALTH, 1907 to 1911.

Particulars.	1907.	1908.	1909.	1910.	1911.
Number of institutions	304	312	337	338	355
Number of beds	11,463	12,057	12,630	13,342	13,732
Admissions during year	98,031	107,292	112,102	119,091	125,822
Indoor patients treated	104,483	114,668	118,928	126,234	133,652
Deaths	8,005	8,560	8,814	8,946	9,642
Expenditure	£ 639,002	758,993	805,787	802,212	888,802

In addition to those admitted to the institutions there are large numbers of out-patients. The exact number of these cannot be given, but a rough estimate of distinct cases for 1911 places the total at about 290,000.

Fuller details of hospital statistics are given for 1911 in the table below, the States of the Commonwealth being shewn separately:—

GENERAL HOSPITALS.—NUMBER, STAFFS, AND ACCOMMODATION OF HOSPITALS IN THE COMMONWEALTH, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	N. T.	C'wlth.
Number of Hospitals—								
Government	3	...	2	8	21	2	1	37
Other	138	49	78	13	30	10	...	318
Total	141	49	80	21	51	12	1	355
Medical Staff—								
Males	679	*	169	89	56	32	1	1,026†
Females	21	*	8	4	...	...	...	33†
Total	700	*	177	93	56	32	1	1,059†
Nursing Staff and Attendants—								
Males	103	25	166	55	81	4	1	435
Females	1,400	671	673	353	365	120	4	3,566
Total	1,503	1,830	839	408	446	124	5	5,155
Accommodation—								
Number of dormitories, etc.	889	426	496	129	158	113	3	2,216
Capacity in cubic ft.	6,493,212	4,392,634	2,875,641	1,339,402	1,602,525	695,695	29,223	17,428,337
Number of beds	5,050	3,337	2,679	912	1,220	512	22§	13,732
Cubic ft. to each bed	1,286	1,316	1,073	1,469	1,314	1,359	1,328	1,270

* Information not available. † Exclusive of Victoria. ‡ Inclusive, in Victoria, of 1134 paid staff: sexes not stated. § Exclusive of beds in verandahs.

**GENERAL HOSPITALS.—PATIENTS TREATED IN HOSPITALS IN THE
COMMONWEALTH, 1911.**

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N. T.	C'with.
Indoor Relief: Distinct Persons								
Treated—								
Males ...	30,900	16,174	18,592	4,849	6,455	3,056	149	79,475
Females ...	25,279	11,426	8,707	3,445	2,903	2,402	15	54,177
Total ...	55,479	27,600	27,299	8,294	9,358	5,458	164	133,652
Inmates at beginning of Year—								
Males ...	1,730	1,298	1,017	322	382	158	18	4,925
Females ...	1,263	892	490	227	149	142	6	3,169
Total ...	2,993	2,190	1,507	549	531	300	24	8,094
Admissions and Re-admissions during Year—								
Males ...	28,470	14,876	17,575	4,699	6,073	2,898	138	74,729
Females ...	24,016	10,534	8,217	3,299	2,754	2,260	13	51,093
Total ...	52,486	25,410	25,792	7,998	8,827	5,158	151	125,822
Discharges—Recovered:								
Males ...	19,885	12,637	15,801	2,956	2,819	2,611	90	156,799
Females ...	18,560	9,297	7,420	2,220	1,047	2,067	8	140,619
Total ...	38,445	*21,934	*23,221	5,176	3,866	*4,678	98	197,418
Relieved:								
Males ...	5,158	†	†	1,003	2,437	†	23	18,621
Females ...	3,589	†	†	631	1,380	†	6	15,556
Total ...	8,697	†	†	1,634	3,817	†	29	114,177
Unrelieved:								
Males ...	962	227	347	268	154	11	4	1,873
Females ...	589	167	206	198	63	13	...	1,256
Total ...	1,451	394	553	466	217	24	4	3,109
Not stated:								
Males ...	...	412	113	12	69	43	...	649
Females ...	...	226	51	12	39	33	...	361
Total ...	...	638	164	24	108	76	...	1,010
Deaths—								
Males ...	2,317	1,587	1,255	493	550	220	12	6,374
Females ...	1,232	917	515	245	213	143	3	3,268
Total ...	3,549	2,504	1,770	678	763	363	15	9,642
Inmates at End of Year—								
Males ...	1,978	1,311	1,076	349	426	171	23	5,334
Females ...	1,359	819	515	220	161	146	2	3,222
Total ...	3,337	2,130	1,591	569	587	317	25	8,556
Average Daily Number Resident—								
Males ...	1,852	§	§	378	404	213	24	§
Females ...	1,463	§	§	258	222	164	3	§
Total ...	3,315	2,155	§	636	626	377	27	§

* Including relieved. † Included in recovered. ‡ Cases relieved are included in those recovered, in Victoria, Queensland, and Tasmania. § Information not available.

The revenue and expenditure of the institutions were as follows:—

GENERAL HOSPITALS.—REVENUE AND EXPENDITURE, 1911.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W.Aust.*	Tas.	N. T.	C'wlth.
Revenue—	£	£	£	£	£	£	£	£
Fees of patients, etc.	50,011	23,025	17,848	6,347	14,268	5,211	352	117,062
Government grants	156,829	61,861	92,648	47,917	56,330	18,725	†	434,310‡
Other ...	152,606	139,993	68,157	11,246	38,993	6,531	†	417,526‡
Total ...	359,446	224,879	178,653	65,510	109,591	30,467	†	968,546‡
Expenditure—								
Salaries ...	259,398	162,280	65,576†	20,324	70,255	11,463	1,181	888,802
Maintenance ...			80,694	32,280		9,594	1,435	
Other, including buildings ...	85,820	37,978	22,242	18,299		9,983	...	
Total ...	345,218	200,258	168,512	70,903	70,255	31,040	2,616	888,802

* Exclusive of assisted hospitals. † Including rent. ‡ Information not available.
§ Excluding Northern Territory.

2. Hospitals for General and Special Cases.—The tables here given refer to general hospitals. In addition there are hospitals for “specials” (such as women’s, children’s, and infectious diseases hospitals), and institutions nearly allied to hospitals (such as consumptive sanatoria). In the first and second numbers of the Commonwealth Year Book, these were tabulated with general hospitals. Where the institutions carry on general hospital relief, they are still included with those establishments.

(i.) *New South Wales.* A Government hospital is established at Little Bay. There are four women’s and one children’s hospitals in the metropolis. Other leading institutions are the Thomas Walker Convalescent Hospital, Dental Hospital, Home for Incurables, Hospital for Infants and Asylum for Women and Children, Infants’ Home, etc. A feature of late years has been the establishment of general hospitals in many country towns of growing importance.

(ii.) *Victoria.* Special hospitals, not included in the above tabulation, comprise the Women’s Hospital, with infirmary and midwifery departments, the Children’s Hospital, the Hospital for Women and Children, two Consumptive Sanatoria (one a Government institution), Inebriates’ Institute, Convalescent homes, etc.

(iii.) *Queensland.* There are four lying-in and two children’s hospitals in Queensland, and a sanatorium; also two Lock hospitals, established under the provisions of the Contagious Diseases Act of 1868.

(iv.) *South Australia.* In connection with the leading general hospital in the metropolis, there is a consumptive home and infectious diseases block; there are also a children’s hospital, two lying-in homes, sanatorium, convalescent home, home for incurables, etc.

(v.) *Western Australia.* The leading general hospitals are Government establishments. There is a lying-in establishment in connection with the metropolitan women’s home. There are also homes for the dying and incurable, homes and rests for sailors, strangers, etc.

(vi.) *Tasmania.* Included in the Tasmanian general hospitals are two which pay particular regard to “special cases”; these are the hospital for contagious diseases

(a Government institution) and the convalescent home. Other important institutions of a general nature are the New Town charitable establishment, and the invalid dépôt.

3. Benevolent and Destitute Asylums.—A marked increase has taken place in the amount of aid bestowed upon the aged. Two elements, each of them independent of the growth of population, have influenced this increase. One is, that the general age of the community has advanced,—the large flow of immigration of fifty and sixty years ago having been mostly of persons in the prime of life; the other is the increased regard paid in all British communities to the well-being of the helpless. The result in Australia has been that numerous establishments have been founded for the housing and protection of such as are no longer able to care for themselves. The institutions are supported by Government and municipal aid, public subscriptions, charity performances, bequests, etc., and in many cases relatives of indigent and afflicted persons contribute to their maintenance.

The impossibility of an entirely satisfactory statistical tabulation in regard to all forms of charitable aid, is especially marked in the case of benevolent institutions, since the conditions under which they have been established in the different centres in the Commonwealth have caused divergence in their development and in the classes of cases treated by them. For example, in Western Australia the Home for Destitute Women includes a maternity ward, for which the statistics are not separately kept. Since the predominating function of the Institution is aid to the destitute, it has been included among benevolent asylums. In Victoria, nine of the hospitals are also Benevolent asylums, and they are included wholly under the former. In South Australia, the Destitute Asylum includes lying-in and children's departments.

BENEVOLENT INSTITUTIONS.—REVENUE AND EXPENDITURE, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Revenue—	£	£	£	£	£	£	£
Government aid	78,781	29,172	31,538	13,415	17,207	...	170,113
Municipal aid	...	1,047	...	...	...	...	1,047
Public subs., legacies, etc.	3,747	8,394	1,232	...	...	...	13,373
Fees	4,455	4,679	...	405	138	...	9,677
Other	467	4,467	719	248	...	...	5,901
Total	87,450	47,759	33,489	14,068	17,345	...	200,111
Expenditure—							
Buildings	6,483	31,686	3,515	89	...	...	41,773
Maintenance	76,521	34,591	29,652	13,979	17,207	...	171,950
Other	4,362	140	114	...	...	...	4,616
Total	87,366	66,417	33,281	14,068	17,207	...	218,339

(i.) *Government Asylums for the Infirm, New South Wales.* There are six of these institutions in New South Wales, with something over 4000 beds, usually in continuous use. Inmates at the end of 1911 numbered 3088; deaths numbered 708; and the expenditure amounted to £67,449.

(ii.) *Benevolent Asylums, Victoria.* Besides the asylums attached to hospitals, there are eight institutions in Victoria. The daily average number indoors was 2168 for 1910-11, with 897 distinct cases of outdoor relief. Deaths numbered 464. The total expenditure was £66,417 (of which £31,686 was spent on buildings), and receipts £47,759—£29,172 from Government and £18,587 from other sources.

(iii.) *Benevolent Asylums, Queensland.* There are four institutions in Queensland, with 1077 beds. The total number in the asylums during 1911 was 1603, with a daily average of 1040. Deaths numbered 163. Expenditure amounted to £32,281, and receipts to £33,489, of which £31,537 was Government aid.

(iv.) *Destitute Asylum, Adelaide.* Outside of hospitals and lunatic asylums the destitute of South Australia are dealt with and relieved at the Destitute Asylum, Adelaide. The institution includes lying-in and children's departments. In the asylum the average number of inmates in 1910-11 was 323. There were sixty-seven deaths during the year. Expenditure totalled £6578. In addition, £7905 was dispensed through the institution for outdoor relief of the destitute in both metropolitan and rural districts.

(v.) *Homes for the Destitute, Western Australia.* There are four of these homes in Western Australia supported by public funds. Attached to the Perth Women's Home is a lying-in department. Outdoor relief to the poor and aged is given, the amount expended being included in expenditure in the above table. More than twelve hundred indoor cases were dealt with during 1910. There were sixty-eight deaths.

(vi.) *Charitable Establishments, Tasmania.* There are two principal Government charitable establishments in Tasmania. Beds numbered 283 in 1911. The total number of persons treated was 492, of whom 64 died. The daily average number resident was 217. Total expenditure was £4735, receipts amounting to the same sum, of which £4001 was contributed by the State.

4. **Orphanages, Industrial Schools, etc.**—The organisation of charitable effort varies greatly in regard to orphans and waifs. In many institutions shelter and some form of industrial training is offered to destitute children of all classes, whether orphans or not, while some of those styled orphanages do not confine their relief to orphans strictly so called. The figures in the next table are those for institutions where, it is believed, the principal effort is on behalf of those who are really orphans:—

ORPHANAGES IN COMMONWEALTH, 1907 to 1911.

Particulars.	1907.	1908.	1909.	1910.	1911.
Number of institutions	38	38	42	42	41
Admissions	1,465	1,393	1,613	1,626	1,760
Total number of inmates during year	5,081	4,078	5,150	5,331	5,465
Deaths	17	19	14	22	12
Expenditure	£ 62,439	65,154	61,088	72,882	64,915

(i.) *New South Wales.* The care of destitute and neglected children is entrusted to the State Children's Relief Board, whose officers are charged with a strict supervision regarding the welfare of the children and the treatment of them by those to whom they are boarded out. Useful trades and profitable occupations are taught, and many of the children become useful members of society. The number of children under the board's supervision in 1911-12 was 4677. The board's expenditure in that year was £98,812, or £21 3s. per child.

There are also twelve orphanages, with about 700 persons under care. Deaths are but one or two annually, and the yearly expenditure fluctuates between £7000 and £10,000.

New South Wales had in 1910 three reformatory institutions—the Carpenterian State Reformatory, and the "Sobraon" State Training Ship for boys, the enrolment for 1910 being 56 and 407 respectively; and the Girls' State Industrial School, where for the same year the enrolment was 133.

The training ship attained very satisfactory results. In forty years more than 5000 boys were dealt with, and the records shew that 98 per cent. of these have developed into good citizens. In 1911, the "Sobraon" was purchased by the Commonwealth, to be used in connection with naval training. The boys were placed in the Mittagong Farm Homes and the Brush Farm Home and Reformatory. To the Reformatory are sent boys who have been convicted in the courts, whom it is desired to keep apart from other prisoners, and who are taught useful trades.

For 1911 the figures are:—Brush Farm Home for Boys (Carpenterian Reformatory)—enrolment, 181; Girls' Industrial School—enrolment, 180.

(ii.) *Victoria.* There are ten orphanages in Victoria, with 1578 beds. The total number under care in 1911 was about 2000. Average annual admissions are about 500. Deaths numbered five in 1911. The annual expenditure is about £23,000.

At the end of 1910 there were three industrial and eleven reformatory schools in the State. Of these, one industrial and one reformatory school are wholly controlled by the Government, being used merely as receiving and distributing depôts. The children are sent thence to situations, foster homes or other institutions dealing with State wards. The other schools are under private management, receiving an allowance for State wards. Many of the reformatory children are placed with friends or licensed out. On 31st December, 1911, the wards of the State numbered 7181—classed mostly as neglected children. There were also some children free from legal control, who, being incapacitated, were maintained by the State. The total expenditure for 1911 was £97,898, of which £98,781 was borne by the Government.

Under Government control, but not administered as charity, are the training ships "John Murray" and "Dart," on which general instruction is imparted and special training given in technical seamanship.

(iii.) *Queensland.* There are seven orphanages in Queensland, with over 1000 beds. The number under care is about 1000, deaths averaging six per annum. The expenditure in 1911 was £30,576.

There are also six industrial and reformatory schools. The total number of children under State control at the end of 1911 was 3359. The gross cost was £36,104, of which £32,504 was borne by the Government.

(iv.) *South Australia.* The State Children's Department exercises a supervision over the probationary and industrial schools, the reformatories, and the Methodist Home. The total number of admissions into these institutions in 1910-11 was 212. The number of inmates on the 30th June, 1911, was 199, in addition to which 1306 were placed out, or had been adopted or apprenticed. There were four deaths of children in industrial schools, and fourteen of those placed out and in other institutions. The number of children under State control on 30th June, 1911, was 1505. The expenditure for 1910-11 was £23,169 in gross, of which the Government aid was £2105.

There are three orphan asylums. The number under care during 1911 was 368. There were no deaths in the year, and expenditure amounted to £2371.

(v.) *Western Australia.* In Western Australia there were, in 1910, eight orphanages (including industrial orphanage schools). The admissions during the year were 257, and the number in institutions on 31st December was 822. There were no deaths during the year. The State expenditure was about £10,000.

In the Government Industrial School there were, at the end of 1910, 30 inmates, 193 having been admitted during the year. Seven deaths occurred. At the end of 1911, 825 children were under State control. The net cost to the State was £14,107, parents' contributions amounting to 668.

(vi.) *Tasmania.* There were twenty admissions to the orphanage in 1911, and forty-nine inmates during the year. No deaths occurred. Expenditure amounted to £500.

There are three industrial schools under benevolent institutions in the State. Admissions in 1911-12 numbered twenty-eight, and total inmates during the year 174. No deaths occurred. The expenditure was £2200.

Under the boarding-out system an annual average of 140 children are placed out at an annual average expenditure of £1610. The total number of children under State control at the end of 1911 was 184, the gross cost to the State of children's relief being £2141, of which £149 represents parents' contributions.

(vii.) *Neglected Children.* The following table summarises the number of neglected children under State Departments. In New South Wales a number of children are boarded out with their own mothers, and the inclusion of these would make the total number of neglected children in that State 9130. Similar provisions are in force in some of the other States, the figures, however, not being available.

STATE RELIEF OF NEGLECTED CHILDREN.—TRANSACTIONS OF STATE DEPARTMENTS IN THE COMMONWEALTH, 1911.

Particulars.	N.S.W.*	Vict.	Qld.	S.A.†	W.A.	Tas.	Cwlth.
Number of Children under State control at end of year—							
Males	2,727	3,771	1,672	783	465	128	9,546
Females	1,950	3,410	1,687	722	360	56	8,185
Total	4,677	7,181	3,359	1,505	825	184	17,731
	£	£	£	£	£	£	£
Gross cost to State of children's relief	103,173	97,883	36,104	23,169	14,770	2,141	277,240
Receipts, from parents' contributions, etc.	4,361	4,102	3,600	2,105	663	149	14,980
Net cost	98,812	93,781	32,504	21,064	14,107	1,992	262,260

* For year ended 5th April following. † For year ended 30th June preceding.

5. **Lepers.**—Lazarets for the treatment of lepers have been established in New South Wales (Little Bay); Queensland (Peel Island, near Brisbane, and Dayman Island, Torres Straits); and the Northern Territory (Mud Island). Quarantine and isolation stations have also been used for the segregation of patients. A great deal of information concerning the beginning and progress of leprosy in Australia has been collected and published by Dr. J. Ashburton Thompson, Chief Government Medical Officer and President of the Board of Health, New South Wales, from whose reports the following table has been compiled:—

CASES OF LEPROSY RECORDED IN THE COMMONWEALTH, 1855 to 1911.

State.	1855 to 1906.	1907.	1908.	1909.	1910.	1911.	Total.
New South Wales	140	4	2	2	5	3	156
Victoria	*27	—	—	—	—	—	*27
Queensland	†186	21	23	8	6	6	†250
South Australia	37	1	—	—	—	—	38
Western Australia	4	—	3	4	3	2	16
Tasmania	1	—	—	—	—	—	1
Total	*†395	26	28	14	14	11	*†488

* In addition, some Chinese.

† In addition, many Kanakas.

6. **Hospitals for the Insane.**—The method of compiling insanity statistics has been fairly uniform throughout the States, but the various methods of observing the early stages of the development of insanity introduce an element of uncertainty which considerably reduces the value of comparison. In the summary given below, licensed houses (except as regards expenditure) are included in the total for New South Wales and Victoria, but in the latter State the figures are exclusive of reception houses and observation wards in gaols:—

HOSPITALS FOR INSANE, COMMONWEALTH, 1907 to 1911.

Particulars.	1907.*	1908.*	1909.*	1910.*	1911.*
Number of institutions ...	30	30	31	31	33
Number of beds ...	13,238	14,317	14,546	14,978	15,825
Admissions ...	2,583	2,638	2,740	2,936	3,079
Total number under treatment ...	17,000	17,373	17,915	18,870	19,036
Discharged as recovered, relieved, &c. ...	1,216	1,159	1,245	1,309	1,404
Deaths ...	1,018	1,071	1,046	1,177	1,246
Expenditure ...	£500,168	511,468	514,531	561,677	616,302

* Exclusive of receiving wards at two general hospitals, previously included, and including five licensed houses for insane in Victoria.

The proportion of insane, as well as the total number returned as under treatment, has changed very little during recent years. In the next table the number of insane under official care in Australia is given, and in the table following the proportion of insane to population.

The number of insane persons in institutions in Australia at the end of each of the last five years was as follows:—

INSANE PERSONS IN THE COMMONWEALTH, 1907 to 1911.

State.	1907.	1908.	1909.	1910.	1911.
New South Wales ...	5,509	5,673	5,902	6,148	6,351
Victoria ...	4,969	5,014	5,097	5,241	5,340
Queensland ...	2,069	2,184	2,227	2,260	2,283
South Australia ...	1,019	1,051	1,051	1,055	1,084
Western Australia ...	630	707	782	793	842
Tasmania ...	502	507	506	505	521
Commonwealth ...	14,698	15,136	15,565	16,002	16,421

For the period embraced in the tables Victoria shows the highest rate of insanity, roughly one in 250 persons. It is stated that this is chiefly owing to the proportionately greater number of old persons in that State. On the other hand, in Western Australia, where the population is much younger, a considerably lower insanity rate has prevailed, being about one in 400 in 1907 and 1908, and about one in 350 in 1909, 1910, and 1911.

PROPORTION OF INSANE, COMMONWEALTH, 1907 to 1911.

State.	1907.	1908.	1909.	1910.	1911.
PER 1000 OF THE POPULATION.					
New South Wales ...	3.53	3.58	3.66	3.74	3.79
Victoria ...	4.02	4.01	3.99	4.03	3.92
Queensland ...	3.79	3.92	3.85	3.77	3.67
South Australia ...	2.70	2.70	2.65	2.57	2.57
Western Australia ...	2.48	2.72	2.94	2.87	2.86
Tasmania ...	2.65	2.64	2.62	2.61	2.69
Commonwealth ...	3.53	3.58	3.60	3.62	3.59

Consequent upon the development of a more rational attitude to the treatment of mental cases, there is growing up a greater willingness to submit necessary cases to treatment at an earlier stage than formerly. Hence an increase in the number of recorded cases does not necessarily imply an actual increase in insanity. It is important to bear this in mind, because the small progressive increase in the preceding table is probably to be attributed largely, if not solely, to this circumstance. The increase in expenditure is another evidence of the greater care bestowed on the insane.

The leading features in regard to institutions for the care of the insane are given below for 1911:—

HOSPITALS FOR THE INSANE.—NUMBER, STAFFS, AND ACCOMMODATION,
COMMONWEALTH, 1911.

Particulars.	N.S.W.	Vict.*	Qld.	S.A.	W.A.	Tas.	C'with.
Number of Institutions—							
Government ...	9	3	3	1	2	1	24
Private ...	3	5†	...	...	1	...	9†
Total ...	12	13	3	1	3	1	33
Medical Staff—							
Males ...	20	19	7	2	3	2	53
Females ...	1	...	...	...	...	...	1
Total ...	21	19	7	2	3	2	54
Nursing Staff & Attendants—							
Males ...	453	452	140	71	78	71	1,265
Females ...	348	438	89	55	29	51	1,010
Total ...	801	890	229	126	107	122	2,275
Accommodation—							
No. of dormitories ...	1331	1,383	441	¶	33	365	¶
Capacity in cubic feet ...	13,413,012	3,407,190.	1,306,502	¶	620,952	781,932	¶
No. of beds ...	6,024	4,966	2,253	1,159	762	661	15,825.
Cubic feet to each bed ...	{ 1600\$ 11,000 }	686	580	¶	815	1,183	¶

* Exclusive of Receiving House, Royal Park, and of the Receiving Wards at Bendigo and Geelong hospitals. † There are five private licensed houses in Victoria, in which there were 109 cases at end of 1911. Other figures for these private asylums are not available. ‡ Government hospitals only. § Ordinary dormitory. ¶ Hospital dormitory. ¶ Information not available.

HOSPITALS FOR THE INSANE.—PATIENTS TREATED, 1911.

Particulars.	N.S.W.	Vic.*	Q'ld.	S.A.	W.A.	Tas.	C'wth.
No. of distinct persons treated during year							
Males	4,463	3,110	1,655	750	691	311	10,980
Females	2,932	2,981	977	578	295	293	8,056
Total	7,395	6,091	2,632	1,328	986	604	19,036
Admissions & re-admissions during year—							
Males	787	428	287	158	135	56	1,851
Females	460	389	141	115	80	43	1,228
Total	1,247	817	428	273	215	99	3,079
Discharges—Recovered—							
Males	268	120	141	4	47	14	594
Females	191	94	77	1	31	15	409
Total	459	214	218	5	78	29	1,003
Relieved and unrelieved—							
Males	61	33	16	82	13	7	212
Females	35	63	6	69	9	7	189
Total	96	96	22	151	22	14	401
Absconders—							
Males	3	5	...	...	...	...	8
Females	1	1	..	...	...	...	2
Total	4	6	...	...	...	...	10
Deaths—							
Males	338	244	111	48	45	26	812
Females	147	158	54	40	21	14	434
Total	485	402	165	88	66	40	1,246
Inmates at end of year—							
Males	3,793	2,681	1,423	616	597	264	9,374
Females	2,558	2,659	860	468	245	257	7,047
Total	6,351	5,340	2,283	1,084	842	521	16,421
Average daily number resident—							
Males	3,646	2,452	1,406	600	585	261	8,950
Females	2,369	2,364	849	465	233	255	6,535
Total	6,015	4,816	2,255	1,065	818	516	15,485

* Exclusive of inmates of the Receiving House, Royal Park, and of Receiving Wards attached to the hospitals at Bendigo and Geelong, and of five private licensed houses.

In some of the States it is the practice to allow persons well advanced towards recovery to leave the institutions and reside with their relatives or friends, but they are nevertheless under supervision of the asylum authorities and are kept on the books. These patients are not shewn in the above table as inmates. In nearly every case absconders are retaken. They are shewn above as readmitted.

The revenue of Government asylums is small in comparison with their cost, and consists chiefly of patients' fees. The proportion of expenditure borne by the State amounts to about 86 per cent.

HOSPITALS FOR THE INSANE (GOVERNMENT ONLY), REVENUE AND EXPENDITURE, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Revenue—	£	£	£	£	£	£	£
Fees of patients ...	33,354	20,672	6,777	6,240	3,699	5,208	75,950
Other ...	4,987	...	896	...	761	461	7,105
Total ...	38,341	20,672	7,673	6,240	4,460	5,669	83,055
Expenditure—							
Salaries ...	84,730	91,835	31,442	15,749	17,784	10,292	251,832
Maintenance ...	110,191	82,434	31,801	15,968	14,698	5,965	261,067
Other ...	24,660	*68,454	580	...	2,201	7,508	103,403
Total ...	219,581	242,723	63,823	31,732	34,678	23,765	616,302

* Buildings and repairs.

(i.) *New South Wales.* The latest return available shews that the average length of residence in the hospitals of persons who died, was 4 years 8 months for males and 5 years 9 months for females; and that of persons who were discharged, was 1 year 2 months for males and 1 year 7 months for females.

There are also two State reception houses, where suspected persons are confined for observation, being subsequently either discharged or transferred to lunatic asylums. In two of the gaols observation wards have been instituted, with similar functions.

(ii.) *Victoria.* The average residence in the hospitals of those who died was 7 years 4 months for males, and 9 years 2 months for females; that of those discharged, 1 year 9 months for males, and 1 year 5 months for females.

There are also lunacy wards in two of the general hospitals. On 24th September, 1907, a State receiving house was opened, where persons are placed for observation, and subsequently discharged or transferred to asylums.

(iii.) *Queensland.* The average residence in the institutions of those who died was 5 years 8 months for males and 7 years 11 months for females; and of those who were discharged, 8 months for males and 1 year for females.

There are also three reception houses for insane, which act as dépôts to which patients are sent with a view to determining whether their mental illness is of a merely temporary character, readily to be relieved, or is of such a nature as to need further treatment at the State asylums.

(iv.) *South Australia.* The average residence of those who died was 9 years for males and 8 years 3 months for females; of those discharged, 11 months for males, and 8 months for females.

(v.) *Western Australia.* The period of residence of those who died during the year averaged 3 years 8 months for males and 2 years 1 month for females; of those who were discharged, 1 year 1 month for males and 8 months for females.

(vi.) *Tasmania.* The period of residence of those who died was 8 years 4 months for males and 9 years 2 months for females; that of those discharged, 1 year 6 months for males and 6 months for females.

(vii.) *Causes of Insanity.* The proportion of causes of insanity to the total of ascertained causes in Australia in the five years 1907-1911 shews that hereditary influences have been the chief factor, nearly one-fifth of the total ascertained causes coming under this head. Domestic troubles, adverse circumstances, etc., have also been a fruitful source. About one case in eight was due to intemperance in drink.

**PROPORTION OF ASCERTAINED CAUSES, etc., OF INSANITY, COMMONWEALTH,
1907-11.**

Causes, Previous History, etc.	1907.	1908.	1909.	1910.	1911.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Domestic trouble, adverse circumstances, mental anxiety	14.7	14.5	11.5	12.0	10.6
Intemperance in drink	13.7	12.9	10.1	14.4	15.0
Hereditary influence, ascertained; congenital defect, ascertained	20.3	18.8	15.0	16.9	18.7
Pregnancy, lactation, parturition and puerperal state, uterine and ovarian disorders, puberty, change of life	8.2	6.8	6.4	5.4	5.9
Previous attacks	11.0	13.5	12.0	12.2	9.3
Accident, including sunstroke	4.3	4.0	3.0	2.1	3.0
Old age	7.7	8.0	9.7	10.8	9.9
Other causes ascertained	20.1	21.5	32.3	26.2	27.6
All ascertained causes	100.0	100.0	100.0	100.0	100.0

7. Treatment of Inebriates.—The treatment of inebriates is referred to in the section dealing with Public Justice hereinbefore. (See page 911.)

8. Protection of Aborigines.—For the protection of the aboriginal Australian race there are institutions, under the supervision of Aborigines Boards, where the blacks are housed and encouraged to work, the children receiving elementary education. The work is usually carried on at mission stations, but many of the natives are nomadic in habit of life, and receive food and clothing when they call, whilst others but rarely come under the notice of the boards. The native race is extinct in Tasmania. The average annual expenditure on maintenance, etc., for the last five years was—New South Wales, £16,580; Victoria, £4247; Queensland, £11,780; South Australia including Northern Territory, £13,811; Western Australia, £21,678; Commonwealth, £68,120.

9. Other Charitable Institutions.—Owing to variety of name and function of other charitable institutions it has been found impracticable to give detailed results. The aid given in kind—food, clothing, tools of trade, etc.—is considerable, whilst the shelter and treatment afforded ranges from a bed for a night for casual callers in establishments ministering minor charity, to indoor treatment over long periods for those that exist for the relief of the aged and infirm. The institutions not so particularised include asylums for the deaf, dumb, and blind, maternity institutions and infant homes, homes for the destitute and aged poor, industrial colonies, night shelters, crèches, homes of hope, rescue homes, free kindergarten and ragged schools, auxiliary medical charities, free dispensaries, benevolent societies and nursing systems, ambulance and health societies, boys' brigades, humane and animals' protection societies, prisoners' aid associations, shipwreck relief societies, bush fires, and mining accident relief funds, etc.

10. State Expenditure on Charities.—The table below gives the amount expended by Government on charities in each of the last five years. In some of the States amounts have been included for minor items, which in other States are charged to other heads:—

STATE EXPENDITURE ON CHARITIES, 1907-11.

State.	1907.	1908.	1909.	1910.	1911.
	£	£	£	£	£
New South Wales ...	440,360	481,887	519,327	528,289	518,484
Victoria ...	361,498	383,086	378,165	385,467	486,859
Queensland ...	206,881	216,144	200,141	205,577	287,224
South Australia ...	113,345	88,752	88,618	87,112	98,236
Western Australia ...	146,685	175,839	149,892	139,700	177,734
Tasmania ...	46,100	47,587	86,316	39,558	43,245
Commonwealth ...	1,314,869	1,393,245	1,372,459	1,385,703	1,511,782

11. **Total Charitable Expenditure.**—The expenditure in the Commonwealth in money on hospitals, charities, and all forms of relief publicly given, comprising the amounts furnished by Government and those raised by public subscription, etc., but excluding old-age pensions, exceeds £2,200,000 annually.

SECTION XXV.

GENERAL GOVERNMENT.

§ 1. Scheme of Parliamentary Government.

1. **General.**—The legislative power of the Commonwealth is vested in the Federal Parliament, which consists of the Sovereign, the Senate, and the House of Representatives. The Sovereign is represented throughout the Commonwealth by the Governor-General, who, subject to the Constitution of the Commonwealth, has such powers and functions as the Sovereign is pleased to assign to him. In each State there is a State Governor, who is the representative of the Sovereign for the State, and who exercises such powers within the State as are conferred upon him by the Letters Patent which constitute his office, and by the instructions, which inform him in detail of the manner in which his duties are to be fulfilled. The Legislature in each State is also bi-cameral, and consists of (a) a Legislative Council and (b) a Legislative Assembly, or House of Assembly, the legislative powers of these chambers being delimited by the Commonwealth and the State Constitutions. The latter chamber, which is the larger, is always elective; the qualification for the franchise varies in character. The former chamber is, in the case of New South Wales and Queensland, nominated by the Governor-in-Council, but in the other States it is also elective, the constituencies being differently arranged and some property qualification for the electorate being required. In the Federal Parliament, however, the qualifications for the franchise are identical for both Houses. A brief account of the constitutional history of each of the States was given in previous issues of this book (see especially Year Book No. 4, pp. 27 to 32).

2. **Number of Members of the Legislatures.**—The following table shews the number of members in each of the legislative chambers in the Commonwealth and in each State in March, 1913:—

MEMBERS OF PARLIAMENTS OF AUSTRALIA, 1913.

Members in—	C'wealth.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Upper House	36	57	34	43	18	30	18	236
Lower House	75	90	65	72	40	50	30	422
Total ...	111	147	99	115	58	80	48	658

The use of the expressions "Upper House" and "Lower House" in the above statement, though not justified constitutionally, is convenient, inasmuch as the legislative chambers are known by different names in the Commonwealth and in some of the States.

In the Commonwealth Parliament the Upper House is known as the Senate, and in the State Parliaments as the Legislative Council. The Lower House is known as follows:—In the Commonwealth Parliament as the House of Representatives, in the State Parliaments of New South Wales, Victoria, Queensland, and Western Australia as the Legislative Assembly, and in the State Parliaments of South Australia and Tasmania as the House of Assembly.

3. The Cabinet and Executive Government.—The sections of the Commonwealth Constitution Act dealing with the Executive Government are given on pages 27 and 28 herebefore. In both the Commonwealth and the State Legislatures the forms of Government have been founded on their prototype, the Imperial Government, and the relations established between the Ministry and the representatives of the people are in accordance with those prevailing in Great Britain. The executive powers in the Commonwealth and in the State Governments are vested in the Governor-in-Council. The Executive Council in the Commonwealth and in the majority of the States is co-extensive with a group of departmental chiefs who are usually spoken of as the Cabinet, and who change with the rise and fall of party majorities. In Victoria and Tasmania, however, the Cabinet on leaving office remain members of the Executive Council, though they no longer attend its meetings, and it is in fact an essential feature of the Cabinet system of Government that they should not do so, except to assist the Governor in transacting purely formal business, or to advise on non-political questions.

(i.) *The Executive Council.* This body is composed of the Governor and the Ministers of State holding office for the time being. The latter are sworn both as Executive Councillors and as Ministers controlling the different administrative departments. It should be observed that all persons living who have held Ministerial office under former Governments are also technically members of the Executive Council, and are thus liable to be specially summoned for attendance at meetings of that body. The meetings are official in character; they are presided over by the Governor-General (or Governor) and are attended by the clerk, who keeps a formal record of its proceedings. At these meetings the decisions of the Cabinet are put into official form and made effective, appointments are confirmed, resignations accepted, proceedings ordered, and notices and regulations published.

The official members of the Executive Council in March, 1913, are specified below. In addition all living members of past Ministries (see following pages) are technically liable to be officially summoned to attend meetings of the Executive Council:—

OFFICIAL MEMBERS OF THE COMMONWEALTH EXECUTIVE COUNCIL, 1913.

<i>Prime Minister and Treasurer</i>	... The Right Hon. ANDREW FISHER, P.C.
<i>Attorney-General</i> ...	... The Hon. W. M. HUGHES.
<i>Minister of State for External Affairs</i> ...	The Hon. J. THOMAS.
<i>Minister of State for Home Affairs</i> ...	The Hon. K. O'MALLEY.
<i>Postmaster-General</i> ...	The Hon. C. E. FRAZER.
<i>Minister of State for Defence</i> ...	The Hon. G. F. PEARCE.
<i>Minister of State for Trade and Customs</i>	The Hon. F. G. TUDOR.
<i>Vice-President of Executive Council</i> ...	The Hon. G. MCGREGOR.
<i>Honorary Minister</i> ...	The Hon. E. FINDLEY.
" " ...	The Hon. E. A. ROBERTS.

Particulars of previous Commonwealth Ministries are given on pages 39-41 herebefore, and on pages 940 and 941 following.

(ii.) *The Cabinet.* The meetings of this body are private and deliberative. No one is admitted but the actual Ministry of the day, no records of the meetings transpire, and no official notice is taken of the proceedings. The members of the Cabinet, being the leaders of the party in power in Parliament, control the bent of legislation and must retain the confidence of the people and also of the Governor-General (or Governor), to whom they act as an advising body. They also in effect wield, by virtue of their seats on the Executive Council, the whole executive force of the community. In summoning, proroguing, or dissolving Parliament the Governor-General (or Governor) is usually guided by the advice tendered him by the Cabinet, though legally he is in no way bound to do so. The following statement gives the names of the Ministries of State for the Commonwealth, who have held office since the inauguration of the Commonwealth Government:—

MINISTERS OF STATE FOR THE COMMONWEALTH OF AUSTRALIA FROM 1st JANUARY, 1901, to MARCH, 1913.

EXTERNAL AFFAIRS.			TRADE AND CUSTOMS.		
Name.	From	To	Name.	From	To
§ Rt. Hon. E. BARTON, P.C., K.C.*	1/1/01	23/9/03	Rt. Hon. C. C. KINGSTON, P.C., K.C.	1/1/01	24/7/03
Hon. A. DEAKIN ...	24/9/03	26/4/04	Hon. Sir W. J. LYNE, K.C.M.G.	7/8/03	26/4/04
Hon. W. M. HUGHES ...	27/4/04	17/8/04	Hon. A. FISHER ...	27/4/04	17/8/04
Rt. Hon. G. H. REID, P.C., K.C.**	18/8/04	4/7/05	Hon. A. McLEAN ...	18/8/04	4/7/05
Hon. A. DEAKIN ...	5/7/05	12/11/08	Hon. Sir W. J. LYNE, K.C.M.G.	5/7/05	29/7/07
Hon. E. L. BATCHELOR ...	13/11/08	2/6/09	Hon. A. CHAPMAN ...	30/7/07	12/11/08
Hon. L. E. GROOM ...	3/6/09	28/4/10	Hon. F. G. TUDOR ...	13/11/08	2/6/09
Hon. E. L. BATCHELOR††	29/4/10	8/10/11	Hon. Sir R. W. BEST, K.C.M.G.	3/6/09	28/4/10
Hon. J. THOMAS ...	14/10/11	||	Hon. F. G. TUDOR ...	29/4/10	||
ATTORNEY GENERAL.			TREASURER.		
Name.	From	To	Name.	From	To
Hon. A. DEAKIN ...	1/1/01	23/9/03	Rt. Hon. Sir G. TURNER, P.C.,		
Hon. J. G. DRAKE ...	24/9/03	26/4/04	K.C.M.G. ...	1/1/01	26/4/04
Hon. H. B. HIGGINS, K.C.	27/4/04	17/8/04	Hon. J. C. WATSON* ...	27/4/04	17/8/04
Hon. Sir J. H. SYMON, K.C.M.G.,			Rt. Hon. Sir G. TURNER, P.C.,		
K.C.	18/8/04	4/7/05	K.C.M.G. ...	18/8/04	4/7/05
Hon. I. A. ISAACS ...	5/7/05	11/10/06	Rt. Hon. Sir J. FORREST, P.C.,		
Hon. L. E. GROOM ...	12/10/06	12/11/08	G.C.M.G. ...	5/7/05	29/7/07
Hon. W. M. HUGHES ...	13/11/08	2/6/09	Hon. Sir W. J. LYNE, K.C.M.G.	30/7/07	12/11/08
Hon. P. M. GLYNN ...	3/6/09	28/4/10	Hon. A. FISHER* ...	13/11/08	2/6/09
Hon. W. M. HUGHES ...	29/4/10	||	Rt. Hon. Sir J. FORREST, P.C.,		
			G.C.M.G. ...	3/6/09	28/4/10
			Rt. Hon. A. FISHER, P.C.*	29/4/10	||
HOME AFFAIRS			DEFENCE.		
Name.	From	To	Name.	From	To
Hon. Sir W. J. LYNE, K.C.M.G.	1/1/01	7/8/03	Hon. Sir J. R. DICKSON, K.C.M.G.	1/1/01	||
Rt. Hon. Sir J. FORREST, P.C.,			Rt. Hon. Sir J. FORREST, P.C.,		
G.C.M.G. ...	7/8/03	26/4/04	G.C.M.G. ...	17/1/01	7/8/03
Hon. E. L. BATCHELOR ...	27/4/04	17/8/04	Hon. J. G. DRAKE ...	7/8/03	23/9/03
Hon. D. THOMSON ...	18/8/04	4/7/05	Hon. A. CHAPMAN ...	24/9/03	26/4/04
Hon. L. E. GROOM ...	5/7/05	11/10/06	Hon. A. DAWSON ...	27/4/04	17/8/04
† Hon. T. T. EWING ...	12/10/06	23/1/07	Hon. J. W. McCAY ...	18/8/04	4/7/05
Hon. J. H. KEATING ...	24/1/07	12/11/08	Hon. T. PLAYFORD ...	5/7/05	23/1/07
Hon. H. MAHON ...	13/11/08	2/6/09	Hon. Sir T. T. EWING, K.C.M.G.	24/1/07	12/11/08
Hon. G. W. FULLER ...	3/6/09	28/4/10	Hon. G. F. PEARCE ...	13/11/08	2/6/09
Hon. K. O'MALLEY ...	29/4/10	||	Hon. J. COOK ...	3/6/09	28/4/10
			Hon. G. F. PEARCE ...	29/4/10	||
POSTMASTER-GENERAL.			VICE-PRESIDENT OF THE EXECUTIVE COUNCIL.		
Name.	From	To	Name.	From	To
Rt. Hon. Sir JOHN FORREST, P.C.,			Hon. R. E. O'CONNOR, K.C.	1/1/01	23/9/03
G.C.M.G. ...	1/1/01	17/1/01	Hon. T. PLAYFORD ...	24/9/03	26/4/04
Hon. J. G. DRAKE ...	5/2/01	7/8/03	Hon. G. MCGREGOR ...	27/4/04	17/8/04
Hon. Sir P. O. FYSH, K.C.M.G.	7/8/03	26/4/04	Hon. J. G. DRAKE ...	18/8/04	4/7/05
Hon. H. MAHON ...	27/4/04	17/8/04	† Hon. T. T. EWING ...	5/7/05	11/10/06
Hon. S. SMITH ...	18/8/04	4/7/05	Hon. J. H. KEATING ...	12/10/06	19/2/07
Hon. A. CHAPMAN ...	5/7/05	29/7/07	Hon. Sir R. W. BEST, K.C.M.G.	20/2/07	12/11/08
Hon. S. MAUGER ...	30/7/07	12/11/08	Hon. G. MCGREGOR ...	13/11/08	2/6/09
Hon. J. THOMAS ...	13/11/08	2/6/09	Hon. E. D. MILLEN ...	3/6/09	28/4/10
Hon. Sir J. QUICK ...	3/6/09	28/4/10	Hon. G. MCGREGOR ...	29/4/10	||
Hon. J. THOMAS ...	29/4/10	14/10/11			
Hon. C. E. FRAZER ...	14/10/11	||			

* Prime Minister. ‡ Afterwards the Right Hon. Sir E. Barton, P.C., G.C.M.G., etc. † Afterwards the Hon. Sir T. T. Ewing, K.C.M.G. ‡ Still in office. ¶ Died 10th January, 1901. ** Prime Minister, afterwards the Right Hon. Sir G. H. Reid, P.C., K.C.M.G., etc. †† Died 8th October, 1911.

MINISTERS OF STATE FOR THE COMMONWEALTH OF AUSTRALIA FROM
1st JANUARY, 1901, TO MARCH, 1913—(Continued).

WITHOUT PORTFOLIO.

Name.	From	To	Name.	From	To
Hon. N. E. LEWIS	1/1/01	23/4/01	Hon. J. HUTCHISON	13/11/08	2/6/09
Hon. Sir P. O. Fysh, K.C.M.G.	24/4/01	7/8/03	Hon. A. DEAKIN*	3/6/09	28/4/10
Hon. J. H. KEATING	5/7/05	11/10/06	Col. Hon. J. F. G. FOXTON	3/6/09	28/4/10
Hon. S. MAUGER	12/10/06	29/7/07	Hon. E. FINDLEY	29/4/10	14/10/11
Hon. J. H. COOK	28/1/08	12/11/08	Hon. C. E. FRAZER	29/4/10	14/10/11
			Hon. E. A. ROBERTS	23/10/11	

See notes on previous page.

(iii.) *Constitution of Ministries.* The subjoined table shews the constitution of the Ministries in the Commonwealth and the State Governments in March, 1913:—

CONSTITUTION OF MINISTRIES, 1913.

Ministers with Seats in—	C'wealth.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
The Upper House	3	2	4	2	2	2	2	17
The Lower House	7	7	8	7	4	6	3	42
Total	10	9	12	9	6	8	5	59

The names of the members of the Ministries in each State in May, 1913, are shewn in the following statement:—

MEMBERS OF STATE GOVERNMENT MINISTRIES, 1913.

NEW SOUTH WALES—MINISTRY.

Premier and Colonial Secretary—
HON. J. S. T. MCGOWEN.
Colonial Treasurer and Minister for Railways—
HON. J. H. CANN.
Attorney-General—
HON. W. A. HOLMAN.
Minister of Justice and Solicitor-General—
HON. D. R. HALL, M.L.C.
Secretary for Public Works—
HON. A. GRIFFITH.

Minister for Agriculture and Lands—
HON. J. L. TREFLE.
Secretary for Mines—
HON. A. EDDEN.
Vice-President of the Executive Council—
HON. F. FLOWERS, M.L.C.
Minister for Public Instruction and Labour and Industry—
HON. A. C. CARMICHAEL.

VICTORIA—MINISTRY.

Premier and Treasurer—
HON. W. A. WATT.
Chief Secretary—
HON. J. MURRAY.
Minister for Water Supply and Agriculture—
HON. G. GRAHAM.
Commissioner of Crown Lands and Survey—
HON. H. MACKENZIE.
Minister for Railways, Mines, and Forests—
HON. A. A. BILLSON.

Minister of Public Instruction and Labour—
HON. SIR A. PEACOCK, K.C.M.G.
Attorney-General and Solicitor-General—
HON. J. D. BROWN, M.L.C.
Minister of Public Works and Public Health—
HON. W. H. EDGAR, M.L.C.
Ministers without Office—
HON. J. THOMSON.
HON. J. CAMERON.
HON. W. BAILLIEU, M.L.C.
HON. F. HAGELTHORN, M.L.C.*

* Has charge of immigration matters.

QUEENSLAND—MINISTRY.

<i>Premier, Vice-Pres. of Ex. Council, and Chief Sec.—</i> HON. D. F. DENHAM.	<i>Secretary for Railways—</i> HON. W. T. PAGET.
<i>Home Secretary and Secretary for Mines—</i> HON. J. G. APPEL.	<i>Secretary for Public Instruction—</i> HON. J. W. BLAIR.
<i>Secretary for Public Lands—</i> HON. J. TOLMIE.	<i>Attorney-General—</i> HON. T. O'SULLIVAN, M.L.C.
<i>Treasurer and Secretary for Public Works—</i> HON. W. H. BARNES.	<i>Secretary for Agriculture and Stock—</i> HON. J. WHITE.
	<i>Minister without Portfolio—</i> HON. A. H. BARLOW, M.L.C.

SOUTH AUSTRALIA—MINISTRY.

<i>Premier, Treasurer and Minister for Education—</i> HON. A. H. PEAKE.	<i>Attorney-General and Minister of Industry—</i> HON. H. HOMBURG.
<i>Chief Secretary—</i> HON. J. G. BICE, M.L.C.	<i>Commissioner of Crown Lands and Immigration—</i> HON. F. W. YOUNG.
<i>Commissioner of Public Works and Minister of Mines and Marine—</i> HON. R. BUTLER.	<i>Minister for Agriculture and Irrigation—</i> HON. T. PASCOE, M.L.C.

WESTERN AUSTRALIA—MINISTRY.

<i>Premier and Colonial Treasurer—</i> HON. J. SCADDAN.	
<i>Minister for Lands and Agriculture—</i> HON. T. H. BATH.	<i>Minister for Works and Water Supply—</i> HON. W. D. JOHNSON.
<i>Minister for Mines and Railways—</i> HON. P. COLLIER.	<i>Colonial Secretary—</i> HON. J. M. DREW, M.L.C.
<i>Attorney-General and Min. for Education—</i> HON. T. WALKER.	<i>Ministers without Portfolio—</i> HON. J. C. DODD, M.L.C. HON. W. C. ANGWIN.

TASMANIA—MINISTRY.

<i>Premier, Attorney-General and Minister of Education—</i> HON. A. E. SOLOMON.	
<i>Chief Secretary—</i> HON. G. H. BUTLER, M.L.C.	<i>Minister of Lands and Works and Mines—</i> HON. E. MULCAHY.
<i>Treasurer and Minister of Agriculture and Railways—</i> HON. H. J. M. PAYNE.	<i>Minister without Portfolio—</i> HON. C. RUSSEN, M.L.C.

4. The Appointment of Ministers and of Executive Councillors.—Although it is technically possible for the Governor to make and unmake cabinets at his pleasure, under all ordinary circumstances his apparent liberty in choosing his Executive Council is virtually restricted by the operation of constitutional machinery. When a Ministry is defeated in Parliament or at the polls, the procedure both in the Commonwealth and the State Parliaments generally, though not invariably, follows that prevailing in the

1. See Jenks' "Government of Victoria," pp. 269 *et seq.*

Imperial Parliament. The members of the Ministry tender their resignations to the Governor-General or Governor, whose duty it is to announce his intention of accepting them. The resignations are not actually accepted at once, for in that case the offices would become vacant and business would be at a standstill. The outgoing Premier usually suggests to the Governor the name of the most prominent member of the Opposition, and the Governor thereupon "sends for" the person suggested; and if the latter accepts the responsibility, he endeavours to form a Ministry; if he fails, he informs the Governor, who applies to some other person. The distribution of portfolios is first arranged by the proposed Ministers themselves and is then submitted to the Governor for approval, which is given as a matter of course unless the list contains the name of any person against whom serious objections exist. Before appointing the persons named to the various offices the Governor accepts the resignations of the outgoing Ministers, and also appoints to seats in the Executive Council such members of the new Ministry as do not already hold them. Their seats in Parliament being ordinarily vacated by acceptance of office the new Ministers must go before their constituencies, and the result of these by-elections usually decides the attitude of the Opposition. In the Commonwealth Parliament, however, seats are not vacated by the acceptance of office. It may be seen from what has been stated above that only certain persons can in practice be chosen as members of a Ministry. The Cabinet must be chosen so that the following conditions are fulfilled:—(a) The members must belong to one or other of the Legislative Chambers and also to the same political party; (b) that party must possess a majority in the House of Representatives or in the Legislative Assembly or House of Assembly as the case may be; (c) the Ministers must carry out a concerted policy; (d) they must acknowledge the leadership of one chief Minister; and (e) must be under a joint responsibility, signified by resignation *en bloc* in the event of Parliamentary censure.

5. The Resignation of Ministers.—A Ministry is bound to resign either when it fails to command a majority in the House of Representatives, the Legislative Assembly, or the House of Assembly, as the case may be, or when a want of confidence has been clearly shewn, either (a) by a vote of censure, (b) by a declaration of want of confidence, or (c) by a vote disapproving of some act of the Government. In such cases the Ministry must either resign or must appeal to the country.

6. Enactments of the Parliament.—In the Commonwealth, all laws are enacted in the name of the Sovereign, the Senate, and the House of Representatives. The subjects with respect to which the Commonwealth Parliament is empowered to make laws are enumerated in the Constitution Act (see pp. 22-3 hereinbefore). In the States, laws are enacted in the name of the Sovereign by and with the consent of the Legislative Council and Legislative Assembly or House of Assembly. The Governor-General or the State Governor acts as Viceroy as regards giving the Royal Assent to or vetoing Bills passed by the Legislatures, or reserving them for the special consideration of the Sovereign. In the States, the Councils and Assemblies are empowered generally, subject to the Commonwealth Constitution, to make laws in and for their respective States in all cases whatsoever. Subject to certain limitations, they may alter, repeal, or vary their Constitution. Where a law of a State is inconsistent with a law of the Commonwealth the latter prevails, and the former is, to the extent of the inconsistency, invalid.

7. Powers and Functions of the Governor-General and of the Governors.—The Governor-General and the State Governors act under the authority of the commissions by which they are appointed and of Letters Patent under the Great Seal of the United Kingdom, and according to instructions issued by the Colonial office and passed under the Royal Sign Manual and Signet.

(i.) *The Governor-General.* The office of Governor-General and Commander-in-Chief of the Commonwealth was constituted by Letters Patent issued on the 29th October, 1900, in pursuance of the provisions of the Commonwealth Constitution Act. The powers and duties of the Governor-General were further defined by Royal instructions passed on

the same date. The principal and most important of his functions, legislative as well as executive, are expressly conferred upon him by the terms of the Constitution itself. He is the custodian of the Great Seal of the Commonwealth, and has the appointment of political officers to administer Departments of State of the Commonwealth.

- (a) His legislative functions are exercised with respect to proposed laws as finally passed by the Federal Houses of Parliament. Such Bills are presented to the Governor-General for his assent in the King's name, on receiving which they become law throughout the Commonwealth. The Governor-General may, however, withhold his assent, or may reserve any Bill for the King's pleasure. He may return to the House in which it originated any proposed law with suggested amendments. The King may disallow any law within one year from the date on which it was assented to by the Governor-General.
- (b) The Governor-General's executive functions are, under ordinary circumstances, exercised on the advice of his responsible Ministers. Various specific powers are vested in him by the Constitution; he may summon or prorogue Parliament and may dissolve the House of Representatives. He is the Commander-in-Chief of the military and naval forces of the Commonwealth, and is invested by the Crown with the prerogative of mercy in case of offences committed against the laws of the Commonwealth.
- (c) The Governor-General is also invested with authority in certain matters of Imperial interest, such as the control of the naval and military forces of the Commonwealth; the observance of the relations of foreign States to Great Britain, so far as they may be affected by the indirect relations of such States to the Commonwealth; and the treatment of neutral and belligerent ships in Commonwealth waters in time of war.

The Governor-General may not leave the Commonwealth without having first obtained leave from the Imperial Government, to whom alone he is responsible for his official acts. The present Governor-General is the Right Honourable Thomas, Baron Denman, P.C., G.C.M.G., K.C.V.O. He assumed office on the 31st July, 1911. Particulars of previous Governors-General are given on p. 39 hereinbefore.

(ii.) *The State Governors.* The powers and functions of the State Governors are, within their respective States, very similar to those exercised by the Governor-General for the Commonwealth, and are defined by the terms of their Commissions and by the Royal instructions accompanying the same. A State Governor is the official head of the State Legislature, and assents in the name of the Crown to all Bills passed by the Parliament, reserving for the Royal Assent certain classes of Bills, which are regulated by the Constitution Acts and by the instructions issued by the Imperial Government. The Governors are, under ordinary circumstances, guided by their Executive Councils, the chief matters in which the exercise of discretion is required being the granting or withholding of a dissolution of Parliament when requested by a Premier; the appointment of a new Ministry; or the assenting to, vetoing, or receiving of Bills passed by the legislative chambers. The Governors are authorised, under certain restrictions, to administer the prerogative of mercy by the reprieve or pardon of criminal offenders within their jurisdiction, and to remit fines and penalties due to the Crown. All moneys to be expended for the public service are issued from the Treasury under the Governor's warrant.

The following is a list of the Governors of the various States of the Commonwealth in May, 1913:—

<i>New South Wales</i> ...	SIR GERALD STRICKLAND, K.C.M.G.
<i>Victoria</i> ...	SIR JOHN MICHAEL FLEETWOOD FULLER, Bart., K.C.M.G.
<i>Queensland</i> ...	SIR WILLIAM MACGREGOR, G.O.M.G., C.B.
<i>South Australia</i> ...	ADMIRAL SIR DAY HORT BOSANQUET, G.C.V.O., K.C.B.
<i>Western Australia</i> ...	Major-General SIR HARRY BARRON, K.C.M.G., C.V.O.
<i>Tasmania</i> ...	SIR ELLISTON MACARTNEY, K.C.M.G.

8. **Cost of Parliamentary Government.**—The following statement shows the cost of parliamentary government in the Commonwealth and in each State, as well as in the whole of Australia, for the year ended the 30th June, 1912:—

COST OF PARLIAMENTARY GOVERNMENT, 1911-12.

Particulars.	C'wlth.	N. S. W.	Vict.	Q'ld.	S. A.	W. A.	Tas.	Total.
	£	£	£	£	£	£	£	£
1. Governor-General or Governor—								
Governor's salary ...	9,973	5,000	5,000	3,000	4,000	4,000	2,750	33,723
Private secretary's salary ...	600	350		300	...	350	...	
Governor's establishments ...	10,001	350	7,028	1,518		1,126	224	
Repairs and maintenance of Governor's residences ...	...	1,144		1,011	1,156	2,057	407	32,015
Miscellaneous ...	3,268	50	401	369	165	...	120	
Total ...	23,842	6,894	12,429	6,198	5,341	7,533	3,501	65,738
2. Executive Council—								
Salaries of officers ...	98	257	556	220	...	350	...	1,476
Other expenses ...	16	25	40	76	...	60	...	217
Total ...	109	282	596	296	...	410	...	1,693
3. Ministry—								
Salary of Ministers ...	12,000	10,969	8,400	8,300	5,000	6,200	3,900	54,069
Other expenses ...	348	1,471	(e)	...	...	1,198	253	3,270
Total ...	12,348	12,440	8,400	8,300	5,000	7,398	3,453	57,339
4. Parliament—								
A. The Upper House:								
Allowances to members ...	20,997	...	...	...	3,095	9,577	2,250	35,919
Railway passes ...	10,029	5,472	1,020	(f)	720	220	750	(g)18,211
Other expenses of members ...	...	...	...	...	122	...	3	125
B. The Lower House:								
Allowances to members ...	43,257	24,205	16,046	19,558	6,559	15,687	3,497	128,809
Railway passes ...	(b)	11,006	1,950	(f)	1,660	310	1,250	(g)16,116
Other expenses of members ...	...	1,651	...	1,541	308	64	8	3,572
C. Miscellaneous:								
Salaries of officers and staff ...	14,452	21,263	12,639	7,163	5,138	3,639	2,668	66,962
Printing ...	10,047	7,398	2,768	4,302	5,638	290	1,619	32,062
Hansard ...	13,264	5,968	5,145	5,833	3,376	3,167	...	36,743
Library ...	3,795	670	1,473	559	612	251	120	7,480
Refreshment rooms ...	1,111	299	1,320	927	1,216	871	71	5,815
Water, power, light and heat ...	1,331	766	791	384	762	...	...	...
Postage and stationery ...	1,037	1,174	...	275	...	...	...	...
Miscellaneous ...	6,895	(d)6,789	998	154	973	2,241	369	24,939
Total ...	126,215	86,651	44,150	40,696	30,119	36,317	12,605	376,753
5. Electoral Office—								
Salaries of officers and staff ...	4,575	871	1,165	1,232	2,395	1,924	180	109,164
Other expenses ...	40,866	22,267	17,760	4,616	3,049	8,264	...	...
Total ...	45,441	23,138	18,925	5,848	5,444	10,188	180	109,164
6. Cost of Elections ...	(c)5,868	1,069	10,231	10,900	4,799	6,831	3,091	42,789
7. Royal Commissions and Select Committees—								
Fees of members ...	3,853	6,721	1,200	397	...	...	43	30,915
Other expenses of members ...	1,711	...	642	50	2,968	3,954	47	...
Miscellaneous ...	3,643	4,197	717	772	...	...	...	...
Total ...	9,207	10,918	2,559	1,219	2,968	3,954	90	30,915
GRAND TOTAL ...	223,030	141,392	97,290	73,457	53,671	72,631	22,920	684,391

(a) Including Lower House. (b) Included in Upper House. (c) Including Referenda. (d) Including expenses of Standing Committee on Public Works. (e) Members are allowed £1 a day when travelling. (f) Not available. Each member of both Houses has a pass for the whole of the State Railways. (g) Exclusive of Queensland.

9. **Cost of Parliamentary Government per 1000 of Population.**—In the subjoined table particulars are given for some of the most important items of the cost of parliamentary government per 1000 of population for the year ended 30th June, 1912:—

COST (a) OF PARLIAMENTARY GOVERNMENT PER 1000 OF POPULATION, 1911-12.

Particulars.	C'wth.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Total.
	£	£	£	£	£	£	£	£
1. <i>Governor-General or Governor</i> —								
Salary... ..	2.15	2.88	3.69	4.73	9.51	13.23	14.47	7.26
All other expenses	2.89	1.09	5.49	5.05	3.19	11.69	3.95	6.89
Total	5.14	3.97	9.18	9.78	12.70	24.92	18.42	14.15
2. <i>Executive Council</i>	0.02	0.16	0.44	0.47	...	1.36	...	0.36
3. <i>Ministry</i>	2.66	7.16	6.20	13.09	11.88	24.47	18.17	12.35
4. <i>Parliament</i> —								
<i>A. The Upper House:</i>								
Allowances and other ex-	4.52	...	...	...	7.64	31.67	11.86	7.76
penses of members	2.16(b)	3.15	0.75	...	1.71	0.72	3.95	3.92
Railway passes								
<i>B. The Lower House:</i>								
Allowances and other ex-	9.31	14.88	11.85	33.28	16.32	52.10	18.45	28.50
penses of members	(c)	6.33	1.44	...	3.80	1.03	6.58	3.47
Railway passes								
<i>C. Miscellaneous:</i>								
Salaries of officers and staff	3.11	12.24	9.33	11.30	12.21	12.04	14.04	14.42
Printing and Hansard ...	5.02	7.69	5.84	15.99	21.42	11.43	8.52	14.82
Library	0.82	0.39	1.09	0.88	1.45	0.83	0.63	1.61
All other expenditure ...	2.23	5.20	2.30	2.75	7.02	10.29	2.31	6.62
Total Parliament	27.17	49.88	32.60	64.20	71.57	120.11	66.34	81.12
5. <i>Electoral Office</i>	9.78	13.32	13.97	9.23	12.94	33.70	0.95	23.51
6. <i>Cost of Elections</i>	1.26	0.62	7.55	17.19	11.40	22.59	16.27	9.21
7. <i>Royal Commissions and Select Committees</i>	1.98	6.28	1.89	1.92	7.05	13.08	0.47	6.66
GRAND TOTAL	48.01	81.39	71.83	115.88	127.54	240.23	120.62	147.36

(a) Cost expressed in pounds sterling and decimals of a pound, per 1000 of population.

(b) Including Lower House. (c) Included in Upper House.

§ 2. Parliaments and Elections.

1. **Qualifications for Membership and for Franchise.**—The summary on pages 950-1 gives particulars as to the legislative chambers in the Commonwealth and State Parliaments, and shews concisely the qualifications necessary for membership and for the franchise in each House. Persons who are otherwise eligible, either as members or voters, are generally disqualified on the usual grounds of being of unsound mind or attainted of treason, being convicted of certain offences, and, as regards membership, on the grounds of holding a place of profit under the Crown, being pecuniarily interested in Government contracts, or being an undischarged bankrupt.

2. **The Federal Parliament.**—The Senate consists of thirty-six members, six being returned by each of the original federating States. Members of this chamber are elected for a term of six years, but by a provision in the Constitution a certain number retire at

the end of every third year, although they are eligible for re-election. In accordance with the Constitution the total number of members of the House of Representatives must be as nearly as possible double that of the Senate. In the House of Representatives the States are represented on a population basis, and the numbers stand at present as follows:—New South Wales, 27; Victoria, 21; Queensland, 10; South Australia, 7; Western Australia, 5; Tasmania, 5—total, 75. The Constitution provides for a minimum of five members in each original State. Members of the House of Representatives are elected for the duration of the Parliament, which is limited to three years. In elections for Senators each State is counted as a single electorate, but an elaborate scheme of subdivision had to be undertaken in order to provide workable electorates in each State for members of the House of Representatives. Members of both Houses are paid at the rate of £600 per annum. Further information regarding the Senate and the House of Representatives is given on pages 19 to 24 hereinbefore.

(i.) *Particulars of Elections.* There have been four complete Parliaments since the inauguration of Federation. The first Parliament was opened by His Royal Highness the Duke of Cornwall and York on 9th May, 1901, and was dissolved on 23rd November, 1903. The fourth Parliament began its third session on 19th June, 1912, and was dissolved on the 23rd April, 1913. Further information as to the Commonwealth Parliaments since their inception is given on page 940 hereinbefore. Since the establishment of the Commonwealth there have been four elections for the Senate and for the House of Representatives. The fourth Federal elections took place on 13th April, 1910, when, in addition to the ordinary voting, electors were called upon to decide the questions on the Financial Agreement and the taking over of the State Debts by the Commonwealth. These matters are referred to in detail on pages 779 to 783 hereinbefore. Particulars regarding the number of electors enrolled and the number of electors to whom ballot-papers were issued at the last three elections may be found in the tables given hereunder:—

FEDERAL ELECTIONS OF 16th DECEMBER, 1903, 12th DECEMBER, 1906,
AND 13th APRIL, 1910.

State	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled			
	Males.	Fem.	Total.	Males.	Fem.	Total.	Males.	Fem.	Total.	
THE SENATE.										
New South Wales	1903	360,285	326,764	687,049	189,877	134,487	324,364	52.70	41.16	47.21
	1906	392,077	345,522	737,599	229,654	151,682	381,336	58.57	43.90	51.70
	1910	444,269	390,393	834,662	301,167	211,635	512,802	67.79	54.21	61.44
Victoria ...	1903	302,069	310,403	612,472	171,839	141,648	313,487	56.89	45.63	51.18
	1906	335,886	336,168	672,054	209,252	171,933	381,185	62.30	51.14	56.72
	1910	346,050	357,649	703,699	245,666	222,869	468,535	70.99	62.32	66.58
Queensland	1903	127,914	99,166	227,080	79,938	44,569	124,507	62.49	44.94	54.83
	1906	150,037	121,072	271,109	79,567	44,972	124,539	53.03	37.14	45.94
	1910	158,436	120,585	279,031	104,570	66,064	170,634	66.00	54.78	61.15
South Australia ...	1903	85,947	81,828	167,775	35,736	19,049	54,785	41.58	23.28	32.65
	1906	97,454	95,664	193,118	43,318	27,199	70,517	44.45	28.43	36.51
	1910	105,301	102,354	207,655	63,384	47,119	110,503	60.19	46.03	53.22
Western Australia	1903	74,754	42,188	116,942	26,878	6,270	33,148	35.96	14.86	28.35
	1906	91,427	54,046	145,473	37,180	15,532	52,712	40.67	28.74	36.23
	1910	80,996	53,983	134,979	53,704	30,189	83,893	66.30	55.92	62.15
Tasmania	1903	43,515	38,753	82,268	23,729	13,292	37,021	54.53	34.80	45.00
	1906	47,306	42,903	90,209	29,164	19,715	48,879	61.65	45.95	54.18
	1910	51,731	46,725	98,456	33,539	24,070	57,609	64.83	51.51	58.51
Commonwealth	1903	994,484	899,102	1,893,586	527,997	359,315	887,312	53.09	39.96	46.86
	1906	1,114,187	995,375	2,109,562	628,135	431,033	1,059,168	56.38	43.30	50.21
	1910	1,186,783	1,071,639	2,258,422	802,030	601,946	1,403,976	67.58	56.17	62.16

FEDERAL ELECTIONS OF 16th DECEMBER, 1903, 12th DECEMBER, 1906,
AND 18th APRIL, 1910—(Continued).

State.	Electors Enrolled.*			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled.			
	Males.	Fem.	Total.	Males.	Fem.	Total.	Males.	Fem.	Total.	
THE HOUSE OF REPRESENTATIVES.*										
New South Wales	1903	303,254	274,763	578,017	164,133	118,381	282,514	54.12	43.08	48.86
	1906	363,723	314,777	678,500	216,150	141,227	357,377	59.43	44.87	52.67
	1910	431,702	379,927	811,629	294,049	207,868	501,917	68.11	54.71	61.84
Victoria ...	1903	241,134	247,069	488,223	142,460	120,329	262,789	59.08	48.70	53.83
	1906	335,886	336,168	672,054	209,206	171,009	381,265	62.30	51.16	56.73
	1910	346,050	357,649	703,699	245,663	222,869	468,532	70.99	62.32	66.58
Queensland ...	1903	114,550	88,375	202,925	74,042	41,689	115,731	64.64	47.17	57.03
	1906	150,037	121,072	271,109	79,540	44,942	124,482	53.01	37.12	45.92
	1910	158,436	120,595	279,031	104,570	66,064	170,634	66.00	54.78	61.15
South Australia ...	1903	23,856	25,789	49,645	12,394	7,728	20,122	51.95	29.97	40.53
	1906	42,065	38,578	80,643	19,850	12,669	32,519	47.19	32.84	40.32
	1910	59,581	61,594	121,175	37,189	29,852	67,041	62.42	48.47	55.33
Western Australia	1903	41,500	28,324	69,824	16,824	4,409	21,233	40.54	15.57	30.41
	1906	91,427	54,046	145,473	36,976	15,740	52,716	40.44	23.12	36.24
	1910	80,966	53,983	134,979	53,704	30,189	83,893	66.30	55.92	62.15
Tasmania ...	1903	43,515	38,753	82,268	25,729	13,284	37,013	54.53	34.28	44.99
	1906	57,779	34,839	92,618	23,753	16,441	40,194	62.87	47.19	55.35
	1910	51,731	46,725	98,456	33,539	24,070	57,609	64.83	51.51	58.51
Commonwealth	1903	767,809	703,093	1,470,902	433,582	305,820	739,402	56.47	43.50	50.27
	1906	1,020,917	899,480	1,920,397	585,535	403,018	988,553	57.35	44.81	51.48
	1910	1,128,496	10,20,473	2,148,969	768,714	580,912	1,349,626	68.12	56.93	62.80

* For the House of Representatives the number of electors enrolled in contested divisions only is given.

In the Senate the figures for the year 1906 shew that ballot-papers were issued to 50.21 per cent. of the electors, and are a slight improvement on those for the year 1903, when only about 47 per cent. of the electors visited the polls. There was, however, a substantial increase in the number of electors who voted at the 1910 elections, 62.16 per cent. of the persons on the rolls exercising the franchise. The increase of 11.95 per cent. over the 1906 elections was in a great measure due to the extraordinary amount of party feeling that existed at the 1910 elections. Allowing for the various causes which may have prevented those qualified from recording their votes, it cannot be said that the electors of the Commonwealth have, so far, set a high value on the privilege of the franchise. In the elections for the House of Representatives the figures for the three years shew a slight improvement in percentage of voters as compared with the returns for the Senate; nevertheless they cannot be looked upon as satisfactory. In every instance the percentage of female voters is very far below that of the males.

3. **Commonwealth Referenda, 26th April, 1911.**—Two proposed laws for the alteration of the Constitution were submitted to the people for acceptance or rejection on the 26th April, 1911. They were (A) The Constitution Alteration (Legislative Powers) 1910, and (B) the Constitution Alteration (Monopolies) 1910. If, in a majority of the States, a majority of the electors voting approve the proposed laws, and if a majority of all the electors voting also approve them, they are presented to the Governor-General for the King's assent. Particulars of the alterations proposed have already been given (see page 24). It is intended, at the general elections to take place on 31st May, 1913, to again submit to the people the question of altering the Constitution so as to extend the powers of the Commonwealth Government on similar lines. A draft of the proposed alterations will be found in the Appendix.

Results of the Referenda of 1911 are given in the following table, which shews the number of electors enrolled, electors to whom ballot papers were issued, and the number of votes in favour of, and against, each of the proposed laws, and, as will be seen, neither of the proposed laws was approved by the people.

COMMONWEALTH REFERENDA (LEGISLATIVE POWERS AND MONOPOLIES),
TAKEN ON 26th APRIL, 1911.

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Legislative Powers.		Monopolies.	
							Total Number of Votes given in favour of the Prop's'd Law.	Total Number of Votes given not in favour of the Prop's'd Law.	Total Number of Votes given in favour of the Prop's'd Law.	Total Number of Votes given not in favour of the Prop's'd Law.
N.S.W. ...	461,196	406,998	868,194	233,668	150,520	384,188	135,968	240,605	138,237	238,177
Victoria ...	355,381	367,996	723,377	236,194	212,372	448,566	170,288	270,390	171,453	268,743
Q'land ...	167,725	125,278	293,003	101,245	60,890	162,135	69,552	89,420	70,259	88,472
S.Aust. ...	110,217	105,810	216,027	72,761	61,041	133,802	50,358	81,904	50,835	81,479
W.Aust. ...	83,850	54,847	138,697	42,598	18,884	61,482	33,043	27,185	33,592	26,561
Tas. ...	54,008	48,318	102,326	33,103	24,950	58,053	24,147	33,200	24,292	32,960
Totals for C'wealth	1,232,377	1,109,247	2,341,624	719,569	528,657	1,248,226	483,356	742,704	488,668	736,392

4. **The Parliament of New South Wales.**—The Legislative Council is in this State a nominee chamber, the Legislative Assembly being an elective body. Theoretically the Legislative Council may contain an unlimited number of members, but in practice the number is restricted to about sixty, the members at the latest available date being fifty-eight. The tenure of the seat is for life; four-fifths of the members must be persons not holding any paid office under the Crown, but this is not held to include officers of His Majesty's sea or land forces on full or half pay, or retired officers on pensions. The Legislative Assembly consists of ninety members, who hold their seats during the existence of the Parliament to which they are elected. The duration of any single Parliament is limited to three years.

(i.) *Particulars of Elections.* Since the introduction of responsible government in New South Wales there have been twenty-one complete Parliaments, the first of which opened on the 22nd May, 1856, and was dissolved on the 19th December, 1857, while the twenty-first opened on the 2nd October, 1907, and closed on the 14th September, 1910. The average duration of the Parliaments was two years and five months. The first session of the twenty-second Parliament was opened on the 14th October, 1910. Particulars of voting at the last seven elections are given below:—

LEGISLATIVE ASSEMBLY ELECTIONS, NEW SOUTH WALES, 1894 to 1910.

Date of Opening of Parliament.	Electors upon the Roll.	Members Returned.	Members Unopposed.	Contested Electorates.			
				Electors upon the Roll.	Votes Recorded.	Percentage of Votes Recorded.	Percentage of Informal Votes.
7th August, 1894	298,817	125	1	254,105	204,246	80.38	1.62
13th " 1895	267,458	125	8	238,233	153,034	64.24	0.88
16th " 1898	324,339	125	3	294,481	178,717	60.69	0.92
23rd July, 1901	346,184	125	13	270,861	195,359	72.13	0.79
23rd August, 1904	Males	90	2	304,396	226,057	74.26	0.59
	Females			262,433	174,538	66.51	
2nd October, 1907	Males	90	5	370,715	267,301	72.10	2.87
	Females			336,680	204,650	60.78	
14th October, 1910	Males	90	3	444,242	322,129	72.47	1.78
	Females			400,139	262,154	65.24	

The franchise was extended to women in 1902, and was exercised for the first time at a State election in 1904.

PARLIAMENTS AND ELECTORATES—

Particulars.	Commonwealth.	New South Wales.	Victoria.
1. Senate and Legislative Councils.			
<i>Number of Members</i> ...	36	58. May not be less than 21	34
<i>Qualification for Membership</i> ...	Adult British subjects natural-born or naturalised for 5 years, if (a) eligible to vote at the elections for the Senate, and (b) resident for at least 3 years within the Commonwealth	Male adult natural-born or naturalised British subjects	Male natural-born or naturalised British subjects of the age of 30 years or upwards, (a) if possessed of a freehold property of the annual value of at least £50 for one year previous to the election, and (b) in the case of naturalised subjects if a resident of the State for 10 years
<i>Period for which elected or nominated</i> ...	6 years	For life	6 years
<i>Allowance to Members</i> ...	£600 each per annum	None	None
<i>Qualification for Franchise</i>	Adult British subjects of either sex who have lived in Australia for 6 months continuously. Aboriginal natives of Australia, Asia, Africa, or the islands of the Pacific, except New Zealand, cannot vote at federal elections unless they have acquired a right to vote at elections for the Lower House of a State Parliament	(Nominated)	Adult British subjects of either sex, if either (a) the owner of a freehold of the annual value of £10 or of a leasehold of property rated at £15, or (b) a graduate of a British university, matriculated students of Melbourne University, qualified legal and medical practitioners, ministers of religion, certificated schoolmasters, and naval and military officers. Naturalised subjects must be of 3 years' standing, and must have resided in the State for 12 months
2. House of Representatives, Legislative Assemblies, etc.			
<i>Number of Members</i> ...	75	90	65
<i>Qualification for Membership</i> ...	The same as for the Senate	Male adult British subjects of either sex, who have resided in the Commonwealth for 6 months and in the State continuously for 3 months after naturalisation, and adult natural-born subjects who have resided in the Commonwealth for 6 months and in the State for a continuous period of 3 months	Male adult natural-born British subjects or aliens naturalised for the period of 5 years, if resident in the State for not less than 2 years
<i>Period for which elected</i> ...	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years
<i>Allowance to Members</i> ...	£600 each per annum	£500 each per annum	£300 each per annum
<i>Qualification for Franchise</i>	The same as for the Senate	Adult naturalised subjects of either sex, who have resided in the Commonwealth for 6 months and in the State continuously for 3 months after naturalisation, and adult natural-born subjects who have resided in the Commonwealth for 6 months and in the State for a continuous period of 3 months	Adult natural-born or naturalised subjects of either sex who have resided in the State for a continuous period of 6 months. An elector may be enrolled in (a) the electorate in which he resides, and (b) in an electorate in which he is a freeholder or holder of an unexpired lease, provided that no elector can be on more than 2 rolls. He may vote in which district he chooses, but not in both.

SUMMARY, MARCH, 1913.

Queensland.	South Australia.	Western Australia.	Tasmania.
43	18	30	18
Male adult natural-born or naturalised British subjects	Male natural-born or naturalised British subjects if (a) of the age of 30 years or upwards, and (b) if resident in the State for 3 years	Male natural-born or naturalised British subjects of the age of 30 years or upwards, if (a) in the case of natural-born subjects, resident in the State for 2 years, and (b) in the case of naturalised subjects, if naturalised for 5 years previous to the election and resident in the State during that period	Male British subjects, either natural-born or for at least 5 yrs. naturalised, of not less than 30 years of age, qualified to vote at the election for the Legislative Council, and who have resided in Tasmania for any continuous period of 5 years, or for a period of 2 years immediately preceding the election
For life None (Nominated)	6 years £200 each per annum Adult British subjects of either sex who are either (a) owners of a freehold of the clear value of £50, (b) owners of a leasehold of the clear annual value of £20, with at least 3 years to run or containing a right of purchase, (c) occupiers of a dwelling-house of the clear annual value of £25, (d) occupiers of a dwelling home, and paying not less than £17 yearly rental, (e) registered proprietors of a Crown lease on which there are improvements to the value of at least £50, (f) resident postmasters, stationmasters, and police, in charge of their respective offices or stations, (g) ministers of religion. Voters must have resided in State for 6 months prior to enrolment	6 years £300 each per annum Adult British subjects of either sex who have resided in the State for 6 months, and who either (a) own a freehold estate to the value of £50, (b) occupy a house or own leasehold property rated at £17, (c) hold Crown leases or licenses to the value of not less than £10 per annum, or (d) are on the electoral list of a municipality or road-board district in respect of property of the annual value of £17. Aboriginal natives may only acquire the franchise in respect of a freehold qualification	6 years £150 each per annum Adult British subjects of either sex who have resided in the State for 12 months, if either (a) possessing freehold to the annual value of £10 or leasehold to the value of £30, or (b) graduates of a British university, qualified legal or medical practitioners, officiating ministers of religion, or retired naval or military officers
72	40	50	30
All persons qualified and registered to vote at the election of members of the Legislative Assembly are eligible as members	Any person qualified for the franchise of the House of Assembly is eligible for membership	Male adult British subjects, if resident in the State for 12 months. Naturalised subjects must have been naturalised for 5 years and have resided in the State for 2 years previous to the election	Male adult British subjects, either natural-born or for at least 5 years naturalised, qualified to vote at the election for the House of Assembly, and who have resided in Tasmania for any continuous period of 5 years, or for a period of 2 years immediately preceding the election.
Duration of Parliament, which is limited to 3 years £300 each per annum and £2 per month for postage and telegrams Adult British subjects of either sex who either (a) have resided in Queensland for 12 months continuously and whose names are on the electoral roll, (b) own freehold estate of the value of £100, (c) have occupied a house of the annual value of £10 for at least 6 months, or (d) have a leasehold estate in possession of the annual value of £20 with not less than 18 months to run.	Duration of Parliament, which is limited to 3 years £200 each per annum Adult natural-born or naturalised subjects of either sex who have resided in the State for 6 months continuously.	Duration of Parliament, which is limited to 3 years £300 each per annum Adult natural-born or naturalised subjects of either sex who have resided in the State for 6 months continuously and for a continuous period of 1 month in district	Duration of Parliament, which is limited to 3 years £150 each per annum Adult natural-born or naturalised subjects of either sex who have resided in Tasmania for 6 months continuously.

5. **The Parliament of Victoria.**—Both of the Victorian legislative chambers are elective bodies, but there is a considerable difference in the number of members of each House, as well as in the qualifications necessary for members and electors. The number of members in the Upper House in March, 1913, was 34, and in the Lower House, 65. In the Legislative Council the tenure of the seat is for six years, but one member for each province retires every third year, except in the case of a dissolution, when one half of the newly elected members hold their seats for three years only. Members of the Legislative Assembly are elected for the duration of Parliament, which is limited to three years. The franchise was extended to women by the "Adult Suffrage Act, 1908." An elector for the Legislative Assembly may only vote once, plurality of voting having been abolished in 1899; an elector, however, qualified in more than one district, may select that for which he desires to record his vote. The preferential system of voting (see Section Miscellaneous hereinafter) was for the first time adopted in Victoria at the election held in November, 1911.

(i.) *Particulars of Elections.* Since the introduction of responsible government in Victoria there have been twenty-two complete Parliaments, the first of which was opened on the 21st November, 1856, and closed on the 9th August, 1859, while the twenty-second opened on the 7th January, 1909, and closed on the 24th October, 1911. The second session of the twenty-third Parliament opened on the 3rd July, 1912, and terminated on the 3rd January, 1913.

Statistics regarding the elections that have been held since 1901 will be found below:—

PARTICULARS OF VICTORIAN ELECTIONS, 1902 to 1912.

Year.	Legislative Council.				Legislative Assembly.			
	Electors on Roll.	Electors in Contested Districts.	Voters in Contested Districts	Per-centage.	Electors on Roll.	Electors in Contested Districts.	Voters in Contested Districts.	Per-centage.
1902 ...	134,087	*	*	*	290,241	216,063	141,471	65.47
1904 ...	172,526	104,865	66,182	63.11	264,709	223,600	149,192	66.72
1907 ...	180,738	78,512	27,152	34.58	261,088	191,131	117,098	61.26
1908 ...	185,234	*	*	*	263,876	164,919	88,461	53.64
1910 ...	240,520	136,479	40,053	35.21	487,661	*	*	*
1911 ...	249,481	*	*	*	701,451	619,644	394,189	63.61
1912 ...	258,742	*	*	*	667,983	*	*	*

* Not contested.

As the table shews, the proportion of voters for the Legislative Council is considerably less than that for the Legislative Assembly. The number of persons who voted by post at the elections for the Legislative Assembly in 1911 was 12,362.

6. **The Parliament of Queensland.**—No limit is set by the Constitution Act to the number of members of the Legislative Council of Queensland, the total at the latest available date being forty-three. Members are appointed by the State Governor, and it is provided that not less than four-fifths of the members must consist of persons not holding any office under the Crown, except officers of His Majesty's sea or land forces on full or half-pay, or retired officers on pensions. The members are nominated for life. By "The Electoral Districts Act of 1910" the Legislative Assembly is composed of seventy-two members, and the State is now divided into that number of electoral districts, and the General Election which took place in 1912 was in conformity with this new Act.

(i.) *Particulars of Elections.* Since the establishment of responsible government in Queensland there have been eighteen complete Parliaments, the first of which opened on the 29th May, 1860, and dissolved on the 20th May, 1863, while the eighteenth

Parliament opened on 2nd November, 1909, and closed on 9th January, 1912. The nineteenth Parliament opened on the 2nd July, 1912. Statistics regarding the last six elections are given below:—

ELECTIONS FOR QUEENSLAND LEGISLATIVE ASSEMBLY, 1902 to 1912.

Year.	Number of Seats.	Number of Candidates Nominated.	Candidates sent to the Poll.	Electors Enrolled.			Electors who Voted.			Percentage of Electors Voting in Contested Electorates.		
				Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1902	72	159	154	108,548	...	108,548	80,076	...	80,076	78.88	...	78.88
1904	72	140	117	103,943	...	103,943	60,265	...	60,265	74.16	...	74.16
1907	72	185	179	125,140	95,049	220,189	...	...	152,049	73.42	68.64	71.61
1908	72	137	125	117,385	88,507	205,892	77,632	61,115	138,747	66.13	69.05	67.39
1909	72	145	133	135,841	106,913	242,754	89,609	66,809	156,418	75.34	69.36	72.67
1912	72	144	139	173,801	135,789	309,590	122,844	95,795	218,639	75.92	75.02	75.52

The election of 1907 was the first State election in Queensland at which women voted, the privilege being conferred under Act 5 Edw. VII., No. 1. Some of the returns did not separate the sexes in the figures respecting the number of electors who voted, and the percentage of males and females was therefore calculated on the total returns where the subdivision was made.

7. Parliament of South Australia.—In this State there is a Legislative Council composed of eighteen members and a House of Assembly with forty members, both chambers being elective. Under the Constitution Amendment Act, 1908, the State of South Australia is divided into four Council Districts, of which one returns six members, and the other three return four members each, to the Legislative Council. For the purpose of electing members of the House of Assembly the State is divided into twelve electoral districts. One of the electoral districts (Torrens) returns five members; two (Adelaide and Alexandra) four members each; and the others return three members each.

(i.) *Particulars of Elections.* Since the inauguration of responsible government in South Australia there have been twenty complete Parliaments, the first of which was opened on the 22nd April, 1857, and dissolved on the 1st September, 1859, while the twentieth was opened on the 2nd June, 1910, and terminated on the 16th January, 1912. The first session of the twenty-first Parliament opened on the 19th March, 1912. Particulars of voting at the last five elections are given below:—

PARLIAMENTARY ELECTIONS IN SOUTH AUSTRALIA, 1900 to 1912.

Year.	Electors on Rolls.			Electors Who Voted.			Percentage of Electors Voting.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Female.	
LEGISLATIVE COUNCIL.									
1900	...	38,688	9,854	48,542	21,403	3,907	25,310	55.32	39.65
1902	...	38,413	13,496	51,909	29,978	7,940	37,918	78.04	58.83
1905	...	39,011	13,873	52,884	28,820	8,328	37,148	73.88	60.03
1910	...	48,145	16,157	64,302	32,540	9,356	41,896	67.59	57.91
1912	...	59,228	19,985	79,213	40,709	13,016	53,725	80.91	72.56
LEGISLATIVE ASSEMBLY.									
1902	...	77,147	72,030	149,177	53,471	36,545	90,016	62.14	49.22
1905	...	95,396	92,249	187,645	64,330	50,246	114,576	67.43	54.47
1906	...	96,724	93,438	190,162	60,109	45,997	106,106	69.31	50.73
1910	...	94,656	88,762	183,418	73,464	56,830	130,294	77.61	64.03
1912	...	117,440	106,971	224,411	87,530	73,732	161,262	74.53	68.93

The proportions of votes recorded to total persons entitled to vote in each of the five years given above were as follows:—Legislative Council, 52.14, 73.05, 70.24, 77.64, and 78.71 per cent.; and Legislative Assembly, 60.34, 61.06, 55.80, 71.04, and 71.86 per cent.

It is interesting to note that South Australia was the first of the States to grant women's suffrage (under Act No. 16 of 1894), the franchise being exercised for the first time at the Legislative Assembly election on the 25th April, 1896.

8. Parliament of Western Australia.—In this State both chambers are elective. For the Legislative Council there are thirty members, each of the ten electorates returning three members, while the Legislative Assembly is composed of fifty members, one member being returned by each of the fifty electoral divisions. At the expiration of two years from the date of election to a seat in the Legislative Council, and every two years thereafter, the senior member for the time being for each province retires. Seniority is determined (a) by date of election, (b) if two or more members are elected on the same day, then the senior is the one who polled the least number of votes, (c) if the election be uncontested, or in case of an equality of votes, then the seniority is determined by the alphabetical precedence of surnames and, if necessary, Christian names. Members of the Legislative Assembly are elected for three years.

(i.) *Particulars of Elections.* Since the establishment of responsible government in Western Australia there have been seven complete Parliaments, the first of which was opened on the 30th December, 1890, and was dissolved on the 22nd March, 1893, while the seventh Parliament was opened on the 10th November, 1908, and closed on the 3rd February, 1911. The first session of the eighth Parliament commenced on the 1st November, 1911. Particulars relating to the last five Assembly and three Council elections are given in the tables below.

PARLIAMENTARY ELECTIONS, WESTERN AUSTRALIA, 1901 to 1912.

Year.	Electors on the Roll.			In Contested Districts.			Votes Recorded.			Percentage of Electors Voting		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
LEGISLATIVE ASSEMBLY.												
1901	74,874	16,648	91,522	67,967	14,775	82,742	29,832	8,255	38,087	44	56	46
1904	108,861	54,965	163,826	88,524	49,791	138,315	43,285	23,500	66,785	49	47	48
1905	79,025	42,697	121,722	65,296	36,706	102,002	33,482	19,435	52,917	51	53	52
1908	83,060	52,919	135,979	69,277	44,804	114,081	46,411	29,412	75,823	67	66	66
1911	91,814	60,831	152,645	71,675	50,700	122,375	53,355	38,281	91,636	74	75	75
LEGISLATIVE COUNCIL.												
1908	29,255	6,543	35,798	19,233	4,508	23,741	10,210	2,283	12,493	53	51	52
1910	31,983	7,553	39,536	31,290	7,495	38,785	12,020	2,461	14,481	38	33	35
1912	36,716	10,437	47,153	33,490	9,818	43,308	20,733	5,552	26,285	62	57	59

9. Parliament of Tasmania.—In Tasmania there are two legislative chambers—the Legislative Council and the House of Assembly, both bodies being elective. The Council consists of eighteen members, returned from fifteen districts, Hobart returning three, Launceston two, and the remaining thirteen districts sending one member each. For the Parliament which expired in March, 1909, there were thirty-five House of Assembly districts, each district returning one member, but, in accordance with the Constitution Amendment Act of 1906, upon the expiration of the last Assembly, either by dissolution or by effluxion of time, there are now five House of Assembly districts, viz., the Commonwealth electoral districts, each district returning six members. This latter system came into force at the 1909 elections.

(i.) *Particulars of Elections.* The first Tasmanian Parliament opened on 2nd December, 1856, and closed on 8th May, 1861. There have been seventeen complete Parliaments since the inauguration of responsible government, the last one opening on 2nd July, 1912, and dissolving on 27th December, 1912. The eighteenth Parliament opened on 22nd April, 1913. Particulars of the voting at the last five elections, not including the election held in January, 1913, are given hereunder:—

ELECTIONS, HOUSE OF ASSEMBLY, TASMANIA, 1900 to 1912.

Year.	Electors on Roll.		Electors in Contested Districts.		Votes Recorded.		Percentage of Electors Voting.	
	Males	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1900 ...	39,002	...	29,022	...	18,872	...	65.02	...
*1903 ...	43,999	...	40,267	...	23,766	...	59.87	...
†1906 ...	47,400	41,629	37,120	33,415	23,128	17,194	62.30	51.46
†1909 ...	50,221	45,563	50,221	45,563	30,509	19,893	60.74	43.67
†1912 ...	52,853	50,660	52,853	50,660	40,713	35,337	77.03	69.73

* Manhood suffrage, Act 64 Vic., No. 5. † Universal adult suffrage, Act 3 Edward VII., No. 13.

§ 3. Administrative Government.

In each State, as well as in the Commonwealth, the Government is administered by a number of chief departments, on lines similar to those on which administrative government is carried on in the United Kingdom. Reference has already been made to the creation of the Commonwealth Departments (see pages 778 and 779). In the States the number and functions of the administrative departments vary considerably. This matter has also been referred to hereinbefore (see page 805). In many cases more than one department is under the control of a single Minister. The tabular statement given on this page and on the following pages shews the sub-departments, branches, etc., of each Ministerial Department in the Commonwealth and in each State, together with the Acts administered and other more important matters dealt with.

COMMONWEALTH ADMINISTRATIVE GOVERNMENT, 1913.

Departments, Sub-departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
1. Prime Minister's— (a) Auditor-General. (b) Public Service Commissioner (as from 1st July, 1912).	Arbitration (Public Service), Commonwealth Public Service (as from 1st July, 1912), Commonwealth Salaries, Parliamentary Allowances, Petherick Collection, Royal Commissions.	Auditor - General and Staff, Communication with the Governor-General, Communication with the States, Officers of the Parliament, Public Service Commissioner and Staff, Royal Commissions, <i>The Commonwealth of Australia Gazette</i> , the Federal Executive Council.
2. Attorney-General's— (a) Crown-Solicitor. (b) High Court. (c) Patents, Copyright, Designs, and Trade Marks.	Acts Interpretation, Amendments Incorporation, Bills of Exchange, Commonwealth Conciliation and Arbitration, Copyright, Designs, Evidence, Extradition, High Court Procedure, Judiciary, Jury Exemption, Parliamentary Papers, Patents, Trade-marks and Designs, Rules Publication, Service and Execution of Process, State Law and Records Recognition, Statutory Declarations.	Bankruptcy and Insolvency. Bills of exchange and Promissory Notes, Conciliation and Arbitration. Copyright, Crown Law Offices, Designs, Divorce and Matrimonial Cases, Foreign Corporations, Judiciary and Courts, Marriage, Patents, Parliamentary Drafting, Recognition throughout Commonwealth of State laws, records, and judicial proceedings, Service and Execution throughout Commonwealth of State process and judgments, Trade-marks, Trading and Financial Corporations formed within the limits of the Commonwealth.

COMMONWEALTH—(continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
3. Home Affairs—		
(a) Bureau of Census and Statistics. (b) Electoral Office. (c) Lands and Surveys. (d) Meteorological Office. (e) Public Works. (f) Public Service Commissioner (until 1st July, 1912).	Census and Statistics, Commonwealth Public Service (until 1st July, 1912), Commonwealth Electoral, Commonwealth Franchise, Constitution Alteration (Senate Elections), Disputed Elections and Qualifications, Electoral Divisions, Electoral Validating, Governor-General's Residences, Kalgoorlie to Port Augusta Railway, Lands Acquisition, Meteorology, Referendum (Constitution Alteration), Representation, Seat of Government, Seat of Government Acceptance, Seat of Government (Administration), Senate Elections.	Astronomy, Census and Statistics, Elections, Franchise, Lands, Meteorology, Public Service Commissioner (until 1st July, 1912), Public Works, Railways, Representation of the People, Rivers, Seat of Government, Surveys.
4. Treasury—		
(a) Land Tax and Assessment. (b) Old Age Pensions. (c) Maternity Bonus.	Appropriation, Audit, Australian Notes, Bank Notes Tax, Coinage, Commonwealth Bank, Commonwealth Inscribed Stock, Constitution Alteration (State Debts), Invalid and Old-Age Pensions, Land Tax, Land Tax Assessment, Life Assurance (Companies), Loan Act, Marine Insurance, Maternity Bonus, Supply, Surplus Revenue, Tasmania Grant, Trust Fund Advances.	Appropriation and Supply, Assistance to States, Banking, Currency, Coin and Legal Tender, Government Printer, Insurance, Invalid and Old-Age Pensions, Maternity Bonus, Public Loans, Public Moneys, State Debts, Taxation (other than duties of Customs and of Excise).
5. Trade and Customs—		
(a) Customs and Excise. (b) Fisheries. (c) Navigation. (d) Quarantine.	Australian Industries Preservation, Beer Excise, Bounties, Commerce (trade descriptions), Customs, Customs (Inter-State Accounts), Customs Tariff, Distillation, Excise, Excise Procedure, Excise Tariff, Lighthouse, Manufactures Encouragement, Quarantine, Sea-carriage of Goods, Seamen's Compensation, Secret Commissions, Shale Oils Bounties, Spirits, Sugar Bounty.	Bounties, Bureau of Agriculture, Customs and Excise, Fisheries (other than Pearl Shell or Trepan) in Australian waters beyond territorial limits, Inter-State Commission, Lighthouses, Lightships, Beacons and Buoys, Quarantine, Trade and Commerce (including Navigation and Shipping), Weights and Measures.
6. External Affairs—		
(a) Advertising and Immigration. (b) High Commissioner's Office. (c) Northern Territory. (d) Papua.	Contract Immigrants, Emigration, High Commissioner, Immigration Restriction, Naturalisation, Northern Territory Acceptance, Northern Territory (Administration), Pacific Island Labourers, Papua.	Consular Appointments, External Affairs, Pearl Shell and Trepan Fisheries in Australian waters beyond territorial limits, High Commissioner, Immigration and Emigration, Influx of Criminals, Naturalisation and Aliens, Passports, People of Races (other than the Aboriginal races in any State) for whom it is deemed necessary to make special laws, Relations with the Pacific Islands, Territories of the Commonwealth.
7. Defence—		
(a) Military Board (b) Naval Board	Defence, Naval Agreement, Naval Defence.	Control of Railways with respect to transport for Naval and Military purposes, Naval and Military Defence, Naval and Military Factories and Workshops.
8. Postmaster-General's—		
	Pacific Cable, Post and Telegraph, Post and Telegraph Rates, Purchase Telephone Lines Acquisition, Telegraph, Wireless Telegraphy.	Postal, Telegraph and other like services.

NEW SOUTH WALES—ADMINISTRATIVE GOVERNMENT, 1913.

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
1. Premier's Office*— (a) Governor's Establishment. (b) Agent-General. (c) Immigration & Tourist Bureau.	...	Is charged with—Departmental business connected with the Houses of Parliament (including official publication of debates), foreign correspondence, correspondence with Colonial, Commonwealth, and State Governments, the Agent-General and with Immigration matters, and Norfolk Island.
2. Chief Secretary— (a) Executive Council. (b) Audit Dept. (c) Police Dept. (d) Inspector-General of Insane. (e) Public Health Dept. (f) Master in Lunacy. (g) Medical Board. (h) State Fisheries. (i) Aborigines Protection Board. (j) Board of Fire Commissioners. (k) Electoral Office. (l) Registry of Friendly Societies & Trade Unions. (m) Bureau of Statistics. (n) Dental Board. (o) Meat Industry and Abattoirs Board.	Parliamentary Electorates and Elections, Lunacy, Audit, Banks and Bank Holidays, Birds Protection, Bread, Building and Co-operative Societies, Sunday Closing, Careless Use of Fire, Constitution, Dentists, Destitute Children's Society, Diseased Animals and Meat, Dog and Goat, Fire Brigades, Fisheries, Friendly Societies, Gaming and Betting, Inebriates, Medical Practitioners, Metropolitan Traffic, Native Animals Protection, Native Dogs Destruction, Noxious Trades, Obscene Publications, Police Offences, Police Regulation, Printing, Public Entertainments, Public and Private Hospitals, Public Health, Sydney Corporation, Vagrancy, Weights and Measures, Pure Food, Theatres, etc., Cattle Slaughtering, etc., Dairies Supervision, Juvenile Smoking Suppression, Motor Traffic, Aborigines Protection, Influx of Criminals Prevention.	Is charged with—the public seal, execution of capital sentences, appointment of magistrates, the police, public health, issue of theatrical & racecourse licenses, care and treatment of insane and inebriates, hospitals & charitable institutions, business relating to ecclesiastical establishments, supervision of dairies, general elections, franchise, statistics, and all matters of business not expressly assigned to any other department.
3. Treasury— (a) Stamp Duties Office. (b) Taxation Dept. (c) Government Printing Office. (d) Explosives Dept. (e) Shipping Offices, Sydney and Newcastle. (f) Navigation Dept. (g) Resumed Properties Office. (h) Stores Supply Department. The following departments are connected with the Treasury though administered by Commissioners— (a) Government Railways and Tramways. (b) Sydney Harbour Trust. (c) Government Savings Bank.	Stamp Duties, Land & Income Tax, Merchant Shipping, Navigation, Wharfage and Tonnage Rates, Government Railways, Railways Commissioners Appointments, Sydney Harbour Trust, Government Savings Bank, Pharmacy, Explosives.	Finance, management of Consolidated Revenue, public works, closer settlement, Treasury guarantee, and general loan funds, also of public debt, resumed properties, payment of Imperial and State pensions, purchase and issue of stores, Govt. printing office, Govt. railways and tramways, Sydney Harbour Trust, navigation and shipping, storage and issue of explosives, engagement and discharge of seamen in British and colonial vessels, tenders and contracts for public supplies, etc., State clothing factory.
4. Dept. of Attorney-General and of Justice— (a) Prothonotary & Registrar in Divorce. (b) Master in Equity. (c) Sheriff. (d) Registrar in Bankruptcy. (e) Registrar of Probates, etc. (f) Crown Solicitor. (g) Parliamentary Draftsman. (h) Clerk of the Peace. (i) Registrar of Sydney District Court. (j) Registrar-General. (k) City Coroner. (l) Children's Court. (m) Petty Sessions. (n) Police Magistrates, Clerks of Petty Sessions and Registrars of District Courts. (o) Prisons Department. (p) Public Service Board.	Auctioneers, Bankruptcy, Billiards, Companies, Contractors' Debts, Coroners, Crimes, Criminal Appeal, District Courts, Fines and Penalties, Habitual Criminals, Hawkers and Pedlars, Interstate Debts, Jury, Justices, Legal Process, Liens on Crops, Liquor, Lotteries, Marriage, Money-lenders, Crown Suits, Defamation, Newspapers, Pawnbrokers, Prisons, Public Service, Real Property, Registration of Births, Deaths, and Marriages, of Deeds of Firms, Sheriff, Small Debts Recovery, Stage Carriages, Wills, Probate and Administration, Poor Prisoners Defence.	Is charged with—business relating to the offices of the Chief Justice, and Puisne Judges, Supreme Courts, District Courts, Circuit Courts and Quarter Sessions, deals with all matters relating to remission of sentences, or of fines or estreats or control of Court houses, etc., and advises the Govt. on all legal questions.

* This is not a separate department, but is attached to the Ministerial department held by the Premier for the time being.

NEW SOUTH WALES—(continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
5. Department of Lands— (a) Survey of Lands. (b) Local Land Boards. (c) Trigonometrical Survey. (d) Land Appeal Court. (e) Western Land Board. (f) Closer Settlement Advisory Boards.	Crown Lands, Newcastle Pasturage Reserve, Conditional Purchaser's Relief, Public Roads, Public Parks, Public Gates, Public Trusts, Labour Settlements, Appraisement, Prickly Pear Destruction, Western Lands, Closer Settlement, Church and School Lands.	All business arising from tenures created by Crown Lands Acts and other Acts mentioned, dedications and reservations, exchanges of land, proclamation of towns and villages, business connected with Land Appeal Court, local boards, district surveyors, and Crown land agents, survey of Crown lands, and triangulation survey of State, and making lands available for settlement.
6. Dept. of Public Works.— (a) Architects Branch. (b) National Works, Harbours and Drainage. (c) Railway and Tramway Construction. (d) Engineering Drafting. (e) Survey Drafting (f) Survey. (g) Land Valuation. (h) Local Government. (i) Accounts. (j) Bonds and Contracts. (k) Industrial Undertakings. (l) Metropolitan Board of Water Supply and Sewerage. (m) Hunter District Water Supply and Sewerage Board, and (n) Country Towns Water Supply and Sewerage.	Drainage Promotion, Public Watering Places, Water Rights, Water and Drainage, Public Works, Country Towns Water and Sewerage, Metropolitan and Hunter District Water and Sewerage, Scaffolding and Lifts, Local Government, and all Acts connected with authorised Public Works.	Erection, maintenance, and repair of public buildings and works; construction of harbour works, docks, water supply and sewerage works, tanks and wells, railways and tramways; "National" roads and bridges; surveys and valuations; administration of Local Government Acts; construction of dredges and punts, machinery, State Brickworks, Quarries, Timber Yards, and Workshops.
7. Department of Mines— (a) Ministerial Branch. (b) Registrar and Inquiry. (c) Account and Examining. (d) Lease. (e) Charting and Mining Survey. (f) Geological Survey. (g) Geological Survey Laboratory. (h) Inspectors of Mines and Drills. (i) Miners' Accident Relief Board. (j) Prospecting Board. (k) Mining Museum. (l) Sludge Abatement Board. (m) Coalfields (n) Correspondence. (o) Records.	Mining, Miners' Accident Relief, Mines Inspection, Coal Mines Regulation, State Coal Mines.	All matters relating to mining generally; geological and mining surveys; assays, inspection of mines, miners' accident relief, advances to prospectors.
8. Dept. of Agriculture— (a) Administrative. (b) Accounts. (c) Stock. (d) Forestry. (e) Superintendent and Chief Inspector. (f) Fruit Expert and Irrigation. (g) Exports and Cold Storage. (h) Library and "Agricultural Gazette." (i) Sheep and Wool Expert. (j) Dairy Expert. (k) Chemist. (l) Entomologist. (m) Botanic Gardens, Centennial Park, &c. (n) Hawkesbury Agricultural College. (o) Experiment Demonstration and School Farms. (p) Agricultural Museum. (q) Viticultural Expert. (r) Economic Botanist. (s) Fumigating Chambers.	Vine and Vegetation Diseases, Fruit Pests, Wine Adulteration, Fertilisers, Pastures Protection, Commons, Stock, Stock Diseases, Forestry, Trustees of Show Grounds, Enabling, Fruit Cases, Wentworth, Hay, Balranald and Murrumbidgee Irrigation.	Matters relating to agriculture, forestry, stock, water conservation and irrigation, including experiment and demonstration farms, stud farms, viticultural stations and nurseries, experiment plots, Agricultural college, Farm Schools, Botanic Gardens, Centennial Park and Sydney Domain, Nursery Gardens, Campbelltown; irrigation farms, and supervision of dairies for instructional purposes; destruction and prevention of fruit pests; diseases of stock; publication of Agricultural Gazette and Bulletins; and general advice and instruction on agricultural matters.

NEW SOUTH WALES—(continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Other Matters dealt with or under Control.
9. Dept. of Public Instruction— (a) Public Library. (b) Observatory. (c) National Art Gallery. (d) Australian Museum. (e) Technical Colleges. (f) Technological Museums. (g) Teachers' Training Colleges. (h) State Children's Relief Dept., Ormond House Shelter, and Mittagong Farm Homes. (i) Industrial and Reformatory Schools.	Public Instruction, Free Education, State Children's Relief, Children's Protection, Infant Protection, Neglected Children and Juvenile Offenders, Anatomy, Public Library and Art Gallery, Australian Museum, Schools of Arts, University and University Colleges, Sydney Grammar School, Bursaries Endowment, Trades Hall and Literary Institute, Anatomy.	All matters dealing with education; high schools, district schools, continuation (artisan, commercial and domestic) schools, kindergarten and subsidised teaching, technical education, scholarships, qualifying, intermediate and leaving certificates, medical inspection of school children, anthropometrical survey of school children, rural camp schools for city children, travelling schools, school agriculture, school conveyance system, physical training, swimming, &c.
10. Department of Labour and Industry—	Early Closing, Factories and Shops, Shearers' Accommodation, Agreements validating, Apprentices, Truck, Minimum Wage, Saturday Half Holiday, Industrial Arbitration, Gas, Clerical Workers.	All matters relating to regulation of working conditions in factories and shops, early closing, wages awards, industrial matters generally, and State Labour Bureau.

VICTORIA.—ADMINISTRATIVE GOVERNMENT, 1913.

1. Chief Secretary— (a) Board for the Protection of Aborigines. (b) Public Service Commissioner. (c) Registry of Friendly Societies. (d) Observatory. (e) Government Statist. (f) Marine Board. (g) Audit. (h) Lunacy. (i) Explosives. (j) Mercantile. (k) Marine. (l) Neglected Children and Reformatory Schools. (m) Penal and Gaols. (n) Police. (o) Premier's Office. (p) Inspection of Stores. (q) Public Library. (r) Government Shorthand Writer. (s) Training Ships.	Aborigines, Animals Protection, Constitution, Crimes, Explosives, Fire Brigades, Friendly Societies, Gaols, Inebriates, Libraries, Licensing (part), Lunacy, Marine, Marine Stores and Old Metals, Matches, Medical, Neglected Children, Poisons, Police Offences, Police Regulations, Public Service, Registration of Births, Deaths and Marriages, Theatres, Weights & Measures, Dentists, Indeterminate Sentences, Infant Life Protection, Statistics, and Opium (part), Motor-car, Electoral, Preferential Voting, Pea-rifles and Saloon-Guns.	Departmental business connected with the Houses of Parliament, execution of capital sentences, local option, prisons, the Govt. Gazette, Lotteries, Gaming and Betting, Public Library, Museum and Art Gallery, "Hansard," Police, Public and Bank Holidays, and other matters as indicated in columns 1 and 2.
2. Attorney-General and Minister of Justice— (a) Supreme Court. (b) County Court. (c) Crown Law Offices. (d) Crown Solicitor. (e) Master in Equity and Lunacy. (f) Prothonotary. (g) Registrar of Titles. (h) Sheriffs.	Supreme Court, County Court, Coroners, Justices, Licensing (part), Probate, Crimes, Juries, Declarations & Affidavits, Children's Courts, Companies, Conveyancing, Crown Remedies, Registration of Firms, Hawkers, Insolvency, Instruments, Mines (part), Money-lenders, Pawnbrokers, Real Property, Transfer of Land, Stamps, Trusts, Book Debts, and Imprisonment of Fraudulent Debtors.	Bankruptcy and insolvency, administration and probate, control of courthouses, etc., preparation of legal instruments, administration of justice generally, and advice to Government in all legal questions.
3. Treasury— (a) Land and Income Tax Office. (b) Printing Office. (c) Curator of Intestate Estates. (d) Charities. (e) Tender Board.	Auction Sales, Hospitals and Charities, Public Moneys, Savings Bank, Income Tax, Licensing (part), and Acts relating to loans, State Land Tax.	Conduct of finances, Government banking, the public debt, preparation of Estimates and Budget, financial aid to charities, endowment to municipal institutions.

VICTORIA—(continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
4. Public Instruction—	Education, Teachers, Registration of Teachers and Schools.	Education generally, supervision of the Training College, registration of teachers & schools.
5. Railways—	Railways and other Acts relating to specific railways and railway loans.	Management and maintenance of Government railways and electric trams.
6. Mines—	Mines, Gold Buyers, Boilers Inspection, Mines Development, Coal Mines Regulation.	Deals with applications for mining leases and licenses, water-rights, prospecting.
7. Water Supply—	Water, Waterworks Construction, Water Supply, Loans Application.	Administration of various water works trusts, construction of water works and irrigation systems, boring for water.
8. Agricultural—	Agricultural Colleges, Vegetation Diseases, Stock Diseases, Milk and Dairy Supervision, Artificial Manures, Thistle, and Vine Diseases, Sheep Dipping.	Agricultural colleges & experimental farms, orchards, vineyards, and horticultural gardens, dissemination of information regarding agricultural etc. pursuits, lectures and demonstrations in practical and theoretical agriculture, etc., "Agricultural Journal" and "Agricultural Year Book."
9. Lands— (a) Survey. (b) Botanic Gardens and Domain. (c) Land Purchase & Management Board. (d) Advertising & Intelligence Department (Immigration).	Lands, Closer Settlement, Vermin Destruction, Local Government (part), Seed Wheat Advances, Bush Fires Loan, State Aid Abolition, Mines (part)	Survey, sale, and administration of Crown lands, including occupation for industrial, agricultural, and pastoral purposes. Immigration, assisted and nominated passages.
10. Public Works— (a) Roads and Bridges and Local Govt. Brch. (b) State Schools. (c) Dredges and Snagging. (d) Ports and Harbours.	Local Government, Fisheries, Game, Electric Lighting and Power, Pounds, Dog, Unused Roads and Water Frontages, Tramways, Drainage Areas, Municipal Grounds, Upper Yarra Traffic, Country Roads.	Construction of public works, erection and repairs of all Government buildings, railway construction, lighthouses, buoys, and signal stations, snagging operations in rivers, Alfred Graving Dock, Government steamer, immigration, Labour Bureau.
11. Labour—	Factories and Shops, Servants, Registry Office.	Inspection of factories, workshops and shops, wages boards, lifts.
12. Forests—	Forests.	
13. Public Health—	Health, Cemeteries, Pure Food.	Public health generally, inspection of food.

QUEENSLAND.—ADMINISTRATIVE GOVERNMENT, 1913.

1. Chief Secretary— (a) Auditor-General. (b) Agent-General. (c) Bureau of Exchange of International Publications. (d) Govt. Residency, Thursday Island. (e) Immigration Dept. (f) Intelligence & Tourist Bureau. (g) S.S. <i>Lucinda</i> . (h) Pub. Library, Art Gallery, and Museum.	Constitution, Extradition, Immigration, Officials in Parliament, Public Service, Standard Time, Influx of Criminals Prevention.	Commissions, etc., under Public Seal of State, foreign correspondence, immigration, justices of the peace, legislation, public service, communications with Governor and with States, Commonwealth, British, colonial, and foreign Governments.
2. Public Instruction—	University, Grammar Schools, State Education, Central Technical College.	Primary education, schools of art and technical colleges, grammar schools, University of Queensland.
3. Railways—	Railways, Railway Construction, (Land Subsidy), Railways (Employés' Appeal).	Railways and tramways management and construction.

QUEENSLAND—(continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
4. Home Secretary— (a) Government Advertising Board. (b) Electoral Department. (c) Board of Health. (d) Registrar-General. (e) Dental Board. (f) Local Auditors Board. (g) Medical and Pharmacy Board. (h) Aborigines. (i) Benevolent Asylum. (j) Police. (k) Prisons. (l) Orphanages. (m) Cemeteries. (n) Conciliation Boards. (o) Dalby Sanatorium. (p) Diamantina Hospital for Incurables.	Aborigines, Bank Holidays, Brisb. Traffic, Careless Use of Fire, Carriers, Cemetery, Charitable Institutions, Children's Protection, Contagious Diseases, Dental, Elections, Fencing, Fire Brigades, Hawkers, Health, Hospital, Industrial Schools, Inebriates, Insanity, Legitimations, Leprosy, Licensing, Local Govt., Medical, Native Labourers, Party Processions, Pharmacy, Police, Prisons, Religious, etc., Institutions, Registration Births, etc., Poisons, Statistical Returns, Water Police.	Is charged with business connected with—aborigines, cemeteries, elections, fire brigades, hospitals and charitable institutions, industrial and reformatory schools, insanity, lazarets, police, prisons, public health, quarantine, remission and execution of sentences and penalties, theatres, miscellaneous services, and all other matters of internal arrangement not confided to any other Minister.
5. Treasury— (a) Government Analyst. (b) Govt. Printing Office. (c) Government Savings Bank. (d) Government Stores. (e) Harbours and Rivers Department. (f) Income Tax Department. (g) Marine Department. (h) Marine Board. (i) Water Supply Department. (j) Comptroller of Central Sugar Mills.	Coast Survey, Explosive, Fisheries, Savings Banks, Annuities, Harbour Boards, Harbour Dues, Income Tax, Irrigation, Loans, Local Wks. Loans, Merchant Shipping and Seamen's, Navigation, Oyster, Pearlshell and Bêche-de-mer, Port Dues Revision, Firms Registration, Stock Inscription, Sugar Works, Treasury Notes and Bills, Tobacco, Water Authorities, Weights and Measures.	Central sugar mills, dredges, fisheries, finance generally, harbour boards and improvements, navigation, ports and harbours, powder magazines, public debt, savings banks, taxation generally, trade and commerce, wharves and jetties.
6. Attorney-General— (a) Crown Solicitor. (b) Supreme & District Courts. (c) Curator in Intestacy and Insanity. (d) Trustees in Insolvency. (e) Registry of Friendly Societies. (f) Registry of Titles. (g) Com. of Stamps. (h) Police Magistrates. (i) Petty Sessions.	Building Societies, Companies, District Courts, Friendly Societies, Inquests of Death, Inquest on Fires, Insolvency, Intestacy, Jury, Printing, Real Property, Small Debts, Stamp, Succession and Probate, Supreme Court, Totalisator Restriction, Totalisator Tax, Trade Unions.	Administration of justice generally, advising Government on all legal questions, judicial establishments, courts of petty sessions, preparation of all legal instruments and contracts.
7. Mines— (a) Geological Survey. (b) Mining Registries. (c) Mines Inspectors. (d) Gold Wardens.	Gold Mining, Mineral Lands, School of Mines.	Geological survey, mineral fields, regulation of mines, Charters Towers School of Mines.
8. Public Lands— (a) District Land Offices. (b) District Survey Offices. (c) Survey Office.	Agric. Lands Purchase, Crown Lands, Pastoral Leases, Pub. Parks, Pub. Works Land Resumption, Rabbit, Marsupial-proof Fencing, Trustees of Public Lands.	Destruction, etc., of rabbits, opening and closing roads, reserves, survey, sale, settlement, and occupation of Crown lands, town commonages.
9. Agriculture— (a) Agricultural Collège. (b) Inspectors of Stock and Sheep & Registry of Brands. (c) Botanic Gardens. (d) State Farms and Nurseries. (e) Sugar Experiment Stations. (f) Bacteriological Institute.	Agric. Bank, Brands, Dairy, Diseases in Plants, Sheep and Stock, Game & Fish Acclimatisation, Grape-vine Diseases, Live Stock and Meat Export, Marsupial Boards, Meat and Dairy Produce Encouragement, Native Birds Protection, Slaughtering, Shearers' and Sugar-workers', Sugar Experiment Stations.	Agric. Collège, Botanic Gardens, brands (horses, sheep, and cattle), diseases in animals and plants, loans in aid of co-operative agric. production, marsupial destruction, meat and dairy produce encouragement, slaughter of cattle for consumption, State farms and nurseries, sugar experiment stations.
10. Public Works— (a) Government Architect. (b) Engineer for Bridges. (c) Director of Labour. (d) Factories etc. Inspectors. (e) Inspector of Machinery.	Brisb. Water Supply, Electric Light and Power, Factories and Shops, Wages Bds., Inspection of Machinery and Scaffolding.	Construction of public buildings, State-school buildings, bridges, hospitals, electric light and power stations.

SOUTH AUSTRALIA.—ADMINISTRATIVE GOVERNMENT, 1913.

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
1. Chief Secretary— (a) Statistical Dept. (b) Audit. (c) Public Actuary. (d) Sheriff. (e) Registry-General. (f) Government Printer. (g) Police. (h) Central Board of Health. (i) Hospitals. (j) Lunatic Asylum. (k) Destitute Persons. (l) State Children. (m) Government Shorthand Writer. (n) Photolithographic Department.	Civil Service, Audit, Friendly Societies, Registration of Births, Deaths, and Marriages, Prison, Police Prisons, Sheriff, Legitimation, Public Hospitals, Lunatics, Destitute Persons, Affiliation Law, State Children's, Health, Vaccination, Sale of Food and Drugs, Places and Public Entertainments, and other Acts dealing with law and order.	Chamber of Manufactures, Civil Service exams., fire brigades, Government <i>Gazette</i> , kerosene inspectors, public charities, Royal commissions, prisons, State printing, inspectors of public houses, administration of hospitals, asylums, etc., pub health, law and order, police prisons, photolithography, and correspondence with Governor, judges of Supreme Court, Leg. Council, House of Assembly, other Governments, and consuls.
2. Treasury— (a) Land and Income Tax Department. (b) Stamp Duty Department. (c) Agent General in London.	Motor Vehicles, Seed Wheat, Unclaimed Moneys, Oyster Fishery, Pawnbrokers, Appraisers, Auctioneers, Publicans' Licenses, Hawkers' Licenses, Taxation, Stamp Duty.	Banking, finance and taxation generally, Imperial and other Government pensions, Public Service Superannuation Fund.
3. Attorney-General— (a) Law Officers. (b) Pub. Trustees. (c) Curator of Convicts' Estates. (d) Supreme Ct. (e) Registrars of Industrial Soc., etc., in Admiralty, of Probates, of Companies, and of Building Soc. (f) Insolvency Court. (g) Police and Local Courts. (h) Licensing Benches. (i) Registrar-General of Deeds. (j) Coroners. (k) Electoral Department.	Administration and Probate, Public Trustee, Supreme Court, Legal Practitioners, Succession Duties, Companies, Insolvency, Police, Criminal Law, Local Courts, Real Property, Bills of Sale, Preferable Liens, Workmen's Liens, Deposit of Deeds, Coroners' Electoral Code, Acts in which magistrates have jurisdiction, ancient lights.	Responsible for Government Parliamentary bills and administration of Local Option and Electoral Acts. Deals with issue of summonses and warrants and with preparing informations and complaints, licenses, franchise, appeals from courts.
4. Crown Lands and Immigration, and Mines— (a) Crown Lands Office. (b) Roads Department. (c) Woods and Forests Department. (d) Tourist Bureau. (e) Intelligence Department. (f) Survey Department. (g) Fisheries Department.	Corporations, District Councils, Dog, Fisheries, Manufacturing Districts, Ornamental Grounds, Hocker's Loan, Fences, Bird Protection, Game, National Park, Noxious Weeds, Wild Dog and Foxes, Reclaimed Swamps and Irrigation, Roads, Main Roads, Woods and Forests, Pastoral, Vermin, Licensed Surveyors, Weights and Measures, Botanic Garden, Advances to Settlers.	Matters affecting municipal corporations respecting the Acts under which they are constituted. Payment of main road grants, subsidies, and license fees. All matters affecting Crown lands, roads and bridges, immigration, forest reserves, surveys, botanic gardens, fisheries, issue of monthly bulletins.
5. Public Works— (a) Railways Department. (b) Engineer-in-Chief's Department. (c) Hydraulic Engineer's Department. (d) Works and Buildings and Labour Bureau Department. (e) Marine Board Department. (f) Control of Government Wharves Department. (g) Supply and Tender Board Department. (h) Aborigines Department.	Railway Commissioners, Railways Service Appeal Board, Refreshment Rooms, South-eastern Drainage, Water Conservation, Waterworks, Sewers, Murray River Works, Adelaide Cemetery and Cremation, Marine Boats and Navigation, Renmark Irrigation Trust, Municipal Tramways Trust.	Construction and maintenance of railways, south-eastern drainage works, water conservation works and artesian boring construction of roads outside district councils, town and country waterworks, Adelaide, Glenelg, and Port Adelaide sewers, weirs, locks, and other improvements, River Murray, State Government buildings and Adelaide cemetery, harbour, jetties, lighthouses, and dredging, ministerial control of Renmark Irrigation Colony and Adelaide Municipal Trust, care of the aborigines.
6. Mines— (a) Department of Mines. (b) Government Geologist.	Mining, Gold Dredging.	All matters arising under Mining Acts, warden's courts, record of assays, geological surveys and reports.
7. Education— (a) Education Department (b) Adelaide University. (c) Adelaide School of Mines. (d) Country Schools of Mines. (e) Public Library, Museum, and Art Gallery. (f) Observatory.	Education, Adelaide University, Degrees in Surgery, University Site, Public Library, Museum and Art Gallery, School of Mines.	Education generally, including primary, secondary, technical, and university, institutes, astronomical (but not meteorological) work.

SOUTH AUSTRALIA—(continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
8. Department of Industry—	Conciliation, Factories, Early Closing, Sale of Furniture, Scaffolding, Lifts, Shearers' Accommodation, Steam Boilers and Engine Drivers, Workmen's Compensation Act.	Factories, shops, early closing, industrial disputes, etc.
9. Agriculture and Irrigation— (a) Department of Agriculture. (b) Advisory Board of Agriculture. (c) Agricultural College. (d) Dairy Department. (e) Poultry Department. (f) Horticultural Department. (g) Stock and Brands. (h) Veterinary Department. (i) Produce Department. (j) Irrigation. (k) Experimental Farms.	Wine and Brandy, Fertilisers, Vine, Fruit and Vegetable Protection, Commerce, Hay and Chaff, Insecticides, Phylloxera, Irrigation, Stock Diseases, Brands,	Scientific farming, agricultural colleges and experimental farms, agricultural instruction and general development of agriculture; handling, shipping and cold storage of produce, inspection of stock, registration of stock brands, reclamation and irrigation of land.

WESTERN AUSTRALIA.—ADMINISTRATIVE GOVERNMENT, 1913.

1. Colonial Secretary— (a) Aborigines. (b) Fisheries. (c) Friendly Societies, and Industrial Arbitration. (d) Gaols. (e) Government Gardens. (f) Harbour and Light. (g) Immigration, and General Information. (h) Lunacy. (i) Medical, Public Health and Factories. (j) Observatory. (k) Police. (l) Public Charities, State Children, and Government Labour Bureau. (m) Registry and Statistical. (n) State Steamship Service.	Aborigines, Adoption of Children, Bread, Bank Holidays, Building Societies, Bunbury Harbour Board, Bills of Lading, Boulder Turf Club, Boat Licensing, Conspiracy and Protection of Property, Co-operative and Friendly Societies, Coasting Vessels, Dentists, District Fire Brigades, Early Closing, Employment Brokers, Fremantle Harbour Trust, Friendly Societies, Fisheries, Factories, Game, Harbours and Rivers, Hospitals, Health, Industrial Conciliation, Jetties, Bridges, etc., Kalgoorlie Turf Club, Lunacy, Merchant Shipping, Marine Stores, Medical, Newspaper Libel, Navigation, Oyster Fisheries, Public Institutions, etc., Prisons, Pearling, Police, Police Benefit Fund, Pharmacy and Poisons, Perth High School, Registration of Births, Deaths and Marriages, Royal Commissioners' Powers, Statistical, State Children, Shark Bay Pearl Shell Fishery, Seamen, Shipping, Trespass, Trades Unions, Truck, Toll from Wharves, etc., University Endowment, Vaccination, Workers' Compensation, Workmen's Wages, W.A. Turf Club.	Consuls, passports, inspection of fisheries, protection of aborigines, actuarial industrial arbitration, friendly societies, trades unions, prisons, Government gardens, light-houses and signal stations, harbours and rivers, coastal surveys, immigration, and general information, immigration bureau (Fremantle), immigrants' home (Perth), hospitals, hospitals for insane, early closing, sanitation, factories, astronomical, police, poor relief, labour bureau, births, marriages and deaths, statistics, children's courts, old men's home, old women's home, penal settlement, inebriates' homes, Sunday entertainments, ferries, State steamships.
2. Treasury— (a) London Agency. (b) Printing Dept. (c) Savings Bank. (d) Lithography. (e) Stores. (f) Audit. (g) Taxation. (h) Inspection of Liquor. (i) Tender Board. (j) Premier's Office. (k) Workers' Home Board. (l) State Hotels and Tourist. (m) Public Service Commissioner.	Loan, Inscribed Stock, Treasury Bills, Auctioneers, Stamp, Wines, Beer and Spirits Sale, Employment Brokers, Gun Licensing, Gov. Savings Bank, Land and Income Tax, Dividend and Totalisator Duties, Workers' Homes, Pensions, Audit, Public Service, Sale of Government Properties.	Finance generally, general stores, taxation generally, audits as provided by special Acts, also under Ministerial authority, savings bank, pensions, State hotels and tourist.

WESTERN AUSTRALIA—(continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
3. Attorney-General— (a) Crown Law Offices. (b) Supreme Court. (c) Stipendiary Magistrates. (d) Land Titles Office. (e) Electoral Office. (f) Official Receiver. (g) Curator of Intestates' Estates. (h) Sheriff.	Administration of Justice, Association Incorporation, Bankruptcy, Bills of Sale, Conciliation, Corporations, Companies, Criminal Code, Compensation for Accidents, Crown Suits, Divorce, Death Duties, Evidence, Extradition, Electoral, Firms' Registration, Foreign Companies, Fugitive Offenders, Justice, Life Assurance, Lunacy, Libel, Licensing Laws, Magisterial Districts, Workmen's Wages, Penalties Remission, Quarter Sessions, Real Property, Superannuation, Supreme Court Acts, Truck Act, Transfer of Land, Workers' Compensation, Intestate Estates.	Criminal and civil law, conveying, parliamentary drafting, sheriffs, bankruptcy, intestacy, licensing, petty debts, petty sessions and police courts, land titles and registration of deeds and leases, elections.
4. Public Works— (a) Engineering Division. (b) Architectural Division.	Roads Board, Public Works, Tramways, Electric Light, Municipal Corporations.	Public buildings and works generally, railway and tramway construction, municipalities, and road boards.
5. Agricultural— (a) Stock and Brands. (b) Rabbit Branch. (c) Orchard and Insect Pests. (d) Markets & Refrigerating Works. (e) Entomological. (f) Public Abattoirs. (g) Irrigation in Agricultural Areas. (h) Vegetable Pathology and Botany. (i) Dairying. (j) Agricultural Bank. (k) Live Stock and Frozen Meat. (l) Destructive Birds and Animals. (m) Experimental Farms. (n) Clearing by Traction Engine. (o) Horticultural. (p) Poultry. (q) Agricultural Implement Manufacture. (r) Meat Retailing.	Rabbit, Stock Diseases, Scab, Brands, Insect Pests, Noxious Weeds, Fertilisers and Feeding Stuffs, Contagious Diseases in Bees, Droving, Abattoirs, Vermin, Veterinary Surgeons.	Agricultural, horticultural, and pastoral pursuits generally, irrigation, abattoirs and refrigerating works, manufacture of agricultural implements, clearing by traction engines.
6. Education— (a) Primary Education. (b) Secondary Education. (c) Training College for Teachers. (d) Technical Education.	Education.	Education generally, including primary, secondary, continuation and technical schools. Inspection of Schools. Training of Teachers.
7. Railway—	Government Railways and Tramways.	Management, maintenance and control of Govt. Railways, Perth electric tramways.
8. Mines— (a) Explosives and Analytical. (b) Inspection of Machinery. (c) Mining Engineers. (d) Geological Survey. (e) State Batteries.	Mining, Sluicing and Dredging for Gold, Explosives, Inspection of Machinery, Mines Regulation, Coal Mines, Mining Development.	Mining generally, State batteries and reduction plants.
9. Lands— (a) Lands and Surveys. (b) Woods and Forests.	Land, Cemeteries, Licensed Surveyors, Bush Fires, Timber Regulations, Parks, Reserves, and Agricultural Lands Purchase.	All business in connection with holdings under the Land Acts, reserves, roads, land selection, district survey offices, land agencies.

TASMANIA.—ADMINISTRATIVE GOVERNMENT, 1913.

1. Premier— (a) Governor's Establishment. (b) Premier's Dept. (c) Executive Council. (d) Agent-General.	...	Correspondence with State, Federal, Colonial, British, and Foreign Governments, with Agent-General & Governor, despatches from Secretary of State referred by the Governor, matters submitted by other Ministers.
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TASMANIA—(continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
2. Chief Secretary— (a) Houses of Parliament. (b) Electoral. (c) Audit. (d) Statistical & Registration. (e) Inspection of Machinery. (f) Fisheries. (g) Public Buildings. (h) Charitable Institutions. (i) Boys' Training School. (j) Invalid Depôt. (k) Neglected Children's Department. (l) Medical Institutions. (m) Hospitals. (n) Public Health. (o) Explosives. (p) Public Service Board.	Audit, Bank Holidays, Cemeteries, Registration of Births and Deaths, Botanical Gardens, Charitable Institutions, Electoral, Fire Brigades, Fisheries, Hospitals, Inebriates, Museum & Art Gallery, Newspapers, Pensions, Pharmacy, Public Health, Public Service, Vaccination, Wages Boards, Midwifery, Shops Closing, Workers Compensation.	Charitable institutions, cemeteries, public health, electoral, franchise, fisheries, machinery, statistics, training & industrial schools, public service, explosives, wages boards.
3. Treasury— (a) Taxes. (b) Printing. (c) State Savings Bank. (d) Agricultural Bank. (e) Merchant Ship's Officers Exam. Board.	Suppression of Public Betting, Licensing, Billiard Tables Licensing, Stamp Duties, Auction, Pawnbrokers, Public Debts, Loans to Local Bodies, Land Tax, Taxation, Income Tax, Assessment, Savings Bank, State Advances, Merchant Ships' Officers' Examination.	Finance generally, collection of internal revenue and of stamp duties, Government printing.
4. Mines—	Mining, Mining Companies, Mining Companies (Foreign).	All matters arising under Acts dealing with mining, registration of mining companies
5. Lands— (a) Lands Branch Office, Launceston. (b) Agricultural and Stock Department.	Crown Lands, Closer Settlement, Game Protection, Stock, Diseased Animals, Contagious Diseases (cattle), Rabbits Destruction, Californian Thistle, Vegetation Diseases, Codlin Moth.	Crown lands and surveys, agriculture and stock.
6. Public Works—	Railway Management, Public Works, Local Government.	Construction and control of public works, including railways.
7. Attorney-General— (a) Supreme Court. (b) Lands Titles. (c) Sheriff. (d) Magistracy. (e) Police.	Probate, Stamp Duties, Foreign Companies, Legal Practitioners, Real Property, Prisons, Bankruptcy, Local Courts, Infant Life Protection, Motor Traffic, Police, Police Regulation.	Courts of law, gaols, justices of the peace and coroners, lands titles, police, registration of deeds, Supreme Court & Judges.
8. Education—	Education.	Primary & technical education, University of Tasmania.

SECTION XXVI.

LOCAL GOVERNMENT.

§ 1. Introduction.

1. **Systems of Local Government.**—In the previous issues of this book, a description was given of the systems of Local Government in the several States of the Commonwealth, and at the same time a comparison was made between the Australian and Continental systems. The early history of Local Government in Australia was also dealt with. Owing, however, to considerations of space, these matters have been omitted from the present volume, and the reader is referred to Year Book No. 5, pages 972 to 975.

§ 2. New South Wales.

1. **Development of Local Government Systems.**—In the year 1858 the Municipalities Act was passed by which provision was made for the incorporation of any town or rural district as a municipality upon the presentation to the Governor of a petition signed by at least fifty of the respective ratepayers, and containing a larger number of signatures than those attached to any counter petition. The duties of the Council were defined, and under the Act the general rate was not to exceed one shilling in the pound, but a special rate for water supply, sewerage, and street lighting could be levied. Government endowment was provided for, by way of subsidies on the amount collected from rates, over a period of fifteen years. In all thirty-five districts were incorporated under this Act. The Act of 1858 was repealed in 1867 by the Municipalities Act of that year. Under the provisions of the latter Act the thirty-five existing municipalities were to continue their existence under the designation of boroughs, and all municipalities created in the future were to be classified either as boroughs or municipal districts.

The Act of 1867 was amended from time to time until the whole of the Acts were repealed by the consolidating Act of 1897. This Act did not alter the chief features of previous Acts, and still retained the voluntary principle of incorporation, which was not conducive to the adoption of a general system of local government, because so long as the central Government continued to construct and pay for local works, it was natural that the inhabitants benefited would be willing to deny themselves the advantages of self-government. The law on the subject remained in an admittedly unsatisfactory condition for several years, and, though various measures were introduced into Parliament for its amendment, it was not until the year 1905, when the Shires Act was passed, that a comprehensive scheme of local government was extended to the greater part of the State. By this Act, the whole State, with the exception of the existing municipalities, the Western Division, Lord Howe Island, the islands in Port Jackson, and the Quarantine Station of Port Jackson, was divided into shires, which were themselves subdivided into ridings, each riding having equal representation in the council. An important feature of the Act was that the rates were to be charged on the unimproved value of the land instead of on the annual rental, and as soon as a rate was imposed by a council, the operation of the Land Tax Act was suspended.

In 1906 the Local Government Extension Act was passed amending and consolidating the law relating to municipalities, and extending to them the principles of the Shires Act. Provision was also made whereby the Governor was authorised to proclaim as a city any municipality which had, during the five years preceding such proclamation, an average population of at least 20,000 persons and an average revenue of at least £20,000, and which formed an independent centre of population.

These Acts were in turn repealed, and their provisions amended and consolidated by the Local Government Act of 1906. Further acts were passed in the two following years, containing important amendments, more especially in regard to municipal loans, constitution of areas, valuations, etc. A fuller account of the provisions of these Acts may be found in Year Book No. 5, pp. 975 and 976.

2. Local Government Systems now in Operation. The law relating to local government in New South Wales is now contained in the Acts of 1906, 1907, and 1908 referred to above. Practically the whole of the State, with the exception of the Western Division, has now been brought under the operation of these Acts.

(i.) *Areas Incorporated.* Prior to the year 1907 the total area incorporated formed a very small part of the whole area of the State, as may be seen in the following statement:—

AREAS INCORPORATED IN NEW SOUTH WALES, 1860 to 1906.

Year	...	...	...	1860.	1870.	1880.	1890.	1900.	1906.
Area incorporated—sq. miles	...	...	...	409	649	1,482	2,387	2,768	2,830

Total area of State (exclusive of Lord Howe Island), 310,367 square miles.

The areas incorporated in 1906 in each of the three territorial divisions of the State were as follows:—

DISTRIBUTION OF INCORPORATED AREAS, 1906.

Division.	Incorporated Area.	Unincorporated Area.	Total Area.
Eastern Sq. miles	1,977	93,742	95,719
Central "	571	88,579	89,150
Western "	282	125,216	125,498
Total	2,830	307,537	*310,367

* Total area of State, exclusive of Lord Howe Island, the area of which is 5 square miles.

The total area incorporated under the Local Government Act 1906, to the end of the year 1910, was 185,108 square miles, of which 182,111 square miles were comprised within shires and 2997 within municipalities. The areas incorporated comprise the whole of the eastern and central divisions of the State, with the exception of Lord Howe Island, the islands in Port Jackson, and the quarantine station at Port Jackson.

(ii.) *General.* The above Act came into operation on the 1st January, 1907; it provided for the continuation of existing shires and municipalities, for the creation of new ones, and for their reconstitution by uniting, dividing, altering, or converting areas. Each shire is divided into three ridings, and each municipality may be divided into wards by petition of the council or a majority of the ratepayers to the Governor. The councils consist, in the case of shires, of either six or nine councillors, and in the case of municipalities, of from six to twelve aldermen. A summary of the functions of councils, their powers and duties, together with a detailed statement of rates and ratable property, will be found in previous issues of the Year Book. (See Year Book No. 5, pages 977 to 979.)

(iii.) *Endowment.* Government endowments to shires are fixed every third year, and the amount is determined according to the extent of the shire, the probable revenue from a rate of 1d. in the £, the necessary expenditure, the extent of roads and other public works to be constructed and maintained, and other matters. The endowment in any year is paid on the basis of the amount of general rates collected in the preceding year. At the end of 1911 the endowments to be paid during the triennium 1912-15 were fixed. The classification for the period mentioned is as follows:—

NEW SOUTH WALES.—ENDOWMENT OF SHIRES, CLASSIFICATION, 1912-15.

Class.	1st.	1st.	2nd.	3rd.	4th.	5th.	6th.
No. of Shires	54	59	7	5	3	5	1
Endowment received in the £ on general rate Up to	•	10s.	15s.	20s.	25s.	30s.	†

* No endowment. † Not less than 40s. in the £ on the general rate.

It is also provided that all municipalities not receiving statutory endowment under any Act repealed by the Act of 1906 shall, upon the result of investigations made into their administration and financial necessities, be entitled to a sum not exceeding three shillings and fourpence in the pound on the general rate collected; but if the revenues are sufficient to meet the reasonable requirements of the corporation under proper management no endowment will be paid.

3. *Shires, 1911.*—The total area of the 134 shires constituted under the new system is 182,111 square miles, and the population on the 31st December, 1911, was 601,840.

The shires vary in area from 36 square miles in the case of Ku-ring-gai, immediately north of the metropolis, to 5745 square miles in the case of Lachlan in the Condobolin district.

(i.) *Valuation and Rates Levied.* The unimproved capital value of the shires in 1911 was £94,189,939, as against £89,935,912 in the preceding year. It is not possible to give the improved capital value or the assessed annual value, as the shires are not compelled to make these valuations, and in many cases do not make them. The total amount of all rates levied was £469,605.

(ii.) *Revenue.* The principal heads of revenue for the five years since the new Act came into force are shewn in the following table:—

NEW SOUTH WALES.—INCOME OF SHIRES, 1907 to 1911.

Particulars.*	1907.	1908.	1909.	1910.	1911.
<i>General Fund—</i>	£	£	£	£	£
General rates	287,635	382,336	374,540	421,596	463,501
Government endowment...	235,794	162,859	261,029	277,731	319,593
Public works	3,064	65,781	57,017	59,527	45,331
Health administration ...	2,376	2,979	3,033	3,746	3,998
Public services	4,593	7,038	6,691	7,441	8,769
Shire property ... ..	...	517	1,721	4,229	6,731
Miscellaneous	2,197	4,198	5,651	5,008	8,594
<i>Special and Local Funds</i> ...	...	1,160	7,462	15,095	24,516
 Total revenue...	 535,659	 626,868	 717,144	 794,373	 881,033

* The receipts for Public Works, Health Administration, Public Service, etc., include Government grants, the total endowments and special grants during 1911 amounting to £355,286.

(iii.) *Expenditure.* The following statement shews the expenditure of shires during the years 1907 to 1911 inclusive:—

NEW SOUTH WALES.—EXPENDITURE OF SHIRES, 1907 to 1911.

Particulars.	1907.	1908.	1909.	1910.	1911.
<i>General Fund—</i>	£	£	£	£	£
Administrative expenses ...	100,435	116,932	117,696	125,669	128,126
Public works ...	249,868	516,072	529,954	599,945	647,220
Health administration ...	1,536	4,604	4,573	4,840	5,724
Public services ...	3,870	11,702	10,290	13,012	15,410
Shire property ...	18,853	397	1,911	4,561	7,657
Miscellaneous ...	11,043	6,453	5,886	5,129	7,120
<i>Special and Local Funds</i> ...	...	58	6,474	11,976	20,949
Total expenditure...	385,605	656,218	676,784	765,132	832,206

(iv.) *Assets and Liabilities.* The financial position of the shires at the end of the year 1911 was strong, as there was an excess of assets of £311,762. The following table gives particulars of assets and liabilities as at the 31st December, 1911:—

NEW SOUTH WALES.—ASSETS AND LIABILITIES OF SHIRES, 1911.

Assets.		Liabilities.	
<i>General Fund—</i>		<i>General Fund—</i>	
Outstanding rates ...	£27,940	Temporary loans ...	£12,445
Stores and materials ...	10,585	Sundry creditors ...	38,067
Bank balance ...	140,551	Due on contracts ...	5,523
Sundry debtors ...	6,555	Due to trust fund ...	64
Land ...	9,686	Other ...	253
Buildings ...	41,800	<i>Special and Local Funds</i> ...	11,475
Plant and property*	107,337		
Furniture ...	13,653		
Other ...	2,171		
<i>Special and Local Funds</i> ...	19,811		
Total ...	379,589	Total ...	379,589
		Excess of assets ...	311,762

* Including saleyards, pounds, baths, public watering-places, ferries, wharves, etc.

4. Municipalities.—Including the City of Sydney there are 190 municipalities in New South Wales; of these forty are in the suburbs of Sydney and twelve in the district of Newcastle and suburbs. Since the 1st January, 1908, under the Local Government Act 1906, municipalities must levy a general rate on the unimproved capital value of all ratable land, and may levy additional general, special, local, or loan rates on either the unimproved or improved capital value. Municipal rates are therefore no longer charged on the annual value; the only rates based on that value are those charged by the Metropolitan and Hunter River Water Supply and Sewerage Boards.

(i.) *Capital Value, Area, Population, and Rates Levied.* The following table shews the improved capital value, the area, population, number of buildings, and amount of rates levied in municipalities for the years 1901 and 1908 to 1911:—

NEW SOUTH WALES.—MUNICIPALITIES, IMPROVED CAPITAL VALUE, AREA, POPULATION, NUMBER OF BUILDINGS, AND TOTAL RATES LEVIED, 1901 and 1908-11.

Year ended February.*	Sydney and Suburbs.					Country.				
	Improved Capital Value.	Area.	Population.	Number of Dwellings.	Total Rates Levied.	Improved Capital Value.	Area.	Population.	Number of Dwellings.	Total Rates Levied.
	£	Acres.	No.	No.	£	£	Acres.	No.	No.	£
1901 ...	88,118,600	91,220	467,900	94,907	277,457	36,429,600	1,732,302	371,330	73,862	127,564
1908 ...	103,328,200	95,259	577,180	117,355	426,792	41,668,300	1,824,638	433,470	83,511	208,631
1908 ...	105,641,359	95,259	592,100	120,635	527,926	44,659,776	1,822,821	444,800	84,150	286,329
1909 ...	108,120,427	95,319	605,900	123,880	631,589	44,716,888	1,822,821	456,280	85,341	299,306
1910 ...	111,318,074	95,259	629,303	§	647,762	45,824,399	1,822,821	421,714	§	310,849
1911 ...	119,375,694	95,259	641,960	§	726,712	47,484,486	1,822,821	431,500	§	340,075

* Prior to 1908 the municipal year ended on the first Monday in February, since when the municipal year closes on 31st December. † Census, March, 1901. ‡ Census, April, 1911.
 § Not available. ¶ For eleven months ending 31st December.

The following table gives a comparison of the unimproved and improved values for the years 1907 to 1911 inclusive :—

NEW SOUTH WALES.—MUNICIPALITIES, IMPROVED AND UNIMPROVED CAPITAL VALUES, 1907 to 1911.

Year.	Sydney.	Suburbs.	Metropolis.	Country.	Total.
UNIMPROVED VALUE.					
	£	£	£	£	£
1907 ...	20,207,812	19,583,598	39,791,410	14,875,612	54,667,022
1908 ...	20,207,812	23,799,856	44,007,668	20,104,983	64,112,651
1909 ...	19,970,365	23,486,535	43,456,900	19,798,286	63,255,186
1910 ...	19,952,793	23,823,398	43,776,191	19,753,181	63,529,322
1911 ...	23,940,030	25,942,704	49,882,734	19,961,743	69,844,477

IMPROVED VALUE.					
	£	£	£	£	£
1907 ...	45,749,800	57,578,400	103,328,200	41,668,300	144,996,500
1908 ...	49,060,600	56,441,828	105,502,428	44,784,288	150,286,666
1909 ...	50,948,240	57,172,187	108,120,427	44,716,888	152,837,315
1910 ...	52,142,200	59,175,874	111,318,074	45,824,999	157,143,073
1911 ...	55,520,640	63,855,054	119,375,694	47,484,486	166,860,180

(ii.) *Revenue.* The Local Government Act 1906 prescribed that there should be a general fund in each local government area (municipality and shire), and also special funds for specified purposes. The regulations under the Act prescribed the system of accounts to be kept. This system differs materially from the old "cash" system of receipts (cash actually received) and disbursements (cash actually expended).

Prior to 1908 the municipal year ended on the first Monday in February; now it ends on the 31st December. In all statements of municipal accounts for the year 1908, therefore, the period referred to is from the 4th February to the 31st December, except in the City of Sydney, which does not come under the provisions of the Act of 1906 and where the accounts are kept for the calendar year. The first complete year for which financial particulars are available for the municipalities is the year 1909. Particulars of revenue for the year 1911 are given in the following table:—

NEW SOUTH WALES.—MUNICIPALITIES, REVENUE, 1911.

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£	£
General fund	658,221†	483,721	331,217	814,938†
Trading accounts		8,067	92,992	101,059†
Special and local funds		32,668	194,388	227,056†
Loan funds		43,988	46,298	90,286†
Reserve and Renewals Account		799	6,088	6,887†
Gross revenue	658,221†	569,243	670,983	1,898,447
Deduct transfers* ... ..	...	45,806	59,373	105,179
Net revenue	658,221†	523,437	611,610	1,793,268

* Transfers from various funds to loan funds for principal, interest, and capital expenditure.

† The city of Sydney accounts are kept on a cash basis, i.e., they show actual receipts and disbursements; the accounts of municipalities operating under the Local Government Act show total revenue and expenditure for the year. Items of receipts and disbursements for the city of Sydney cannot be allocated to the different headings shewn for municipalities. † Exclusive of Sydney.

(iii.) *Expenditure.* Reference has already been made to the system of accounts prescribed by the Local Government Act 1906 (see paragraph ii. hereof). The following table gives particulars of expenditure of municipalities for the year 1911:—

NEW SOUTH WALES.—MUNICIPALITIES, EXPENDITURE, 1911.

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£	£
General fund	624,000†	463,220	320,042	783,262†
Trading accounts		9,708	90,247	99,955†
Special and local funds		38,090	185,391	223,481†
Loan funds		35,574	31,738	67,312†
Reserve and Renewals Account		775	1,643	2,418†
Gross expenditure	624,000†	547,367	629,061	1,800,428
Deduct transfers* ... ..	...	45,806	59,373	105,179
Net expenditure	624,000†	501,561	569,688	1,695,249

* Transfers from various funds for principal and interest on loans. † See note † to preceding table. ‡ See note ‡ to preceding table.

(iv.) *Assets and Liabilities.* The financial position of the municipalities as at the 31st December, 1911, is shewn by the following statement of assets and liabilities of the various funds:—

NEW SOUTH WALES.—MUNICIPALITIES, ASSETS, AND LIABILITIES, 1911.

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£	£
Assets—				
General fund	4,845,111†	250,675	410,251	660,926†
Trading accounts		2,409	62,024	64,433†
Special and local funds... ..		23,094	1,135,160	1,158,254†
Loan funds		160,955	444,973	605,928†
Reserves and renewals account		949	9,694	10,643†
Total	4,845,111†	438,082	2,062,102	7,345,295
Liabilities—				
General fund	4,810,441†	58,531	46,685	100,216†
Trading accounts		4,282	28,736	33,018†
Special and local funds... ..		8,474	1,062,015	1,070,489†
Loan funds		769,783	613,722	1,383,505†
Reserves and renewals account		949	9,694	10,643†
Total	4,810,441†	837,019	1,760,832	6,908,312

† See note † to first table on preceding page.

‡ See note ‡ to first table on preceding page.

5. **Sydney Metropolitan Board of Water Supply and Sewerage.**—Prior to the year 1888 the main water supply and sewerage systems of Sydney and suburbs were under the control of the City Corporation, while several of the suburban councils had constructed local systems, but in that year the Government, with the object of placing the administration of both water supply and sewerage systems throughout the county of Cumberland under the control of an independent body, passed an Act authorising the establishment of the Metropolitan Board of Water Supply and Sewerage. This Board consists of seven members, three of whom are appointed by the Government, two by the City Council, and two by the suburban and country municipalities in the county of Cumberland. The Board is under the general supervision of the Minister for Works—a provision considered necessary since the loan expenditure of the Board forms part of the public debt of the State.

6. **Metropolitan Water Supply.**—(i.) *Present System.* In the year 1850 authority was given by the Legislative Council to the City Corporation to construct water and sewerage works. Under this authority a water supply scheme was adopted and carried out, at a cost of nearly £1,750,000, by which the waters of the streams draining into Botany Bay were intercepted and pumped into three reservoirs. This system has now been superseded, the metropolitan water supply being at present obtained from the watersheds of the Nepean, Cataract, and Cordeaux Rivers. The principal reservoirs in connection with the scheme are the “Cataract” and “Prospect” dams. A fuller description of these dams will be found in previous issues of this book (see Year Book No. 5, p. 984), but their dimensions are here given :—

SYDNEY WATER SUPPLY.—CATARACT AND PROSPECT DAMS.

Dam.	Height above Foundation.	Width at Top.	Thickness at Bottom.	Length.	Area of Reservoir	Capacity of Reservoir.
	Feet.	Feet.	Feet.	Feet.	Acres.	Gallons.
Cataract ...	192	16½	150	811	2,104	20,743,200,000
Prospect ...	85½	30	523	7,300	1,266½	11,029,200,000*

* Of which 5,527,000,000 gallons are available by gravitation.

(ii.) *Aqueducts and Mains.* The water is drawn off from the Prospect reservoir by a canal, five miles in length, to the Pipe Head Basin, situated $16\frac{1}{4}$ miles from Sydney. It is then conveyed for a further distance of five miles to Potts' Hill reservoir, which has a capacity of 100,000,000 gallons, covers twenty-four and a half acres, and is designed to tide the city over any interruption of supply from Prospect, and to prevent fluctuation of pressure. Thence the water passes through a screening tank, and proceeds towards the city in two 48-inch cast-iron mains. A fuller description of the system of reticulation adopted will be found in previous issues.

(iii.) *Storage Reservoirs.* In connection with the water supply there are in all thirty-two service reservoirs, with a total maximum capacity of 51,716,000 gallons.

(iv.) *Revenue, Expenditure, and Capital Cost of Sydney Waterworks.* The following table gives particulars as to the revenue, expenditure, and capital cost of the metropolitan waterworks for 1901 and 1908-12.

**SYDNEY WATERWORKS—REVENUE, EXPENDITURE, AND CAPITAL COST,
1901 and 1908-12.**

Year Ended 30th June.	Revenue.	Working Expenses.	Capital Cost exclusive of Items on which Interest is not charged.	Per- centage of Working Expenses to Revenue.	Per- centage of Revenue to Capital Cost.	Interest Payable on Capital Cost.	Net Profit after pay- ing Work- ing Exp- enses and Interest.
	£	£	£	%	%	£	£
1901 ...	203,348	49,270	4,300,552	24.22	4.72	152,333	1,745
1908 ...	283,410	75,016	5,009,012	26.47	5.66	183,033	25 361
1909 ...	267,519*	80,282	5,146,303	30.01	5.19	185,591	1,646
1910 ...	284,943†	93,027	5,286,917	32.64	5.38	184,486	7,430
1911 ...	299,442	99,355	5,420,813	33.18	5.52	192,486	7,601
1912 ...	329,605	112,958	5,606,268	34.27	5.87	198,443	18,204

* Rate reduced from 7d. to 6d. from 1st July, 1908, and water-meter rents abolished. † Meter rentals reimposed from 1st July, 1909, and meterage charge reduced from 1s. to 11d. per 1000 gallons.

(v.) *Quantity of Water, Number of Houses, and Population Supplied.* The following table gives various particulars for the years 1901 and 1908-12, shewing the increase in the supply of water in Sydney and suburbs:—

**SYDNEY WATERWORKS.—NUMBER OF GALLONS, HOUSES AND POPULATION
SUPPLIED, 1901 and 1908-12.**

Year Ended 30th June.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year.	Aver. Daily Supply.		Mains Laid.
					Per House.	Per Head of Estimated Population	
	No.	No.	1000 Gallons.	1000 Gallons.	Gallons.	Gallons.	Miles.
1901	98,298	491,000	21,583	7,877,677	219	43.95	40
1908	124,083	620,400	24,567	8,967,135	197	39.50	48
1909	128,444	642,220	25,911	9,457,660	201	40.34	71
1910	133,788	668,940	26,903	9,819,657	201	40.21	100
1911	139,237	696,185	29,006	10,587,433	208	41.55	102
1912	146,236	731,180	30,522	11,141,700	208	41.74	74

(vi.) *Other Water Supply Systems under the Metropolitan Board.* In addition to the main metropolitan water supply system there are certain other systems within the County of Cumberland managed by the Metropolitan Board. (a) The Richmond waterworks are entirely unconnected with the Sydney supply. Water is supplied to the town by a small pumping station on the left bank of the Hawkesbury River, just below the confluence of the Grose and Nepean. (b) The Wollongong waterworks are also unconnected with the Sydney supply. The source of supply is the Cordeaux River and the

catchment area is 2400 acres in extent. The total capacity of the reservoir is 173,000,000 gallons and the total length of the main about nineteen miles, exclusive of the extension to Port Kembla and Unanderra. (c) The Manly waterworks are supplied by a special catchment area of about 1300 acres, and are also connected with the metropolitan system by a 10-inch main from Mosman. (d) The water-supply for the districts of Campbelltown, Camden and Narellan, and Liverpool is not drawn from the main Sydney supply through Potts' Hill, but is received by gravitation from the upper canal at Prospect. For further details of these water-supply systems see previous issues.

7. Metropolitan Sewerage System.—The system which is now under the control of the Metropolitan Board of Water Supply and Sewerage will be found fully described in previous issues. See Year Book No. 5, p. 986.

(i.) *Revenue, Expenditure, and Capital Cost of Sydney Sewerage Systems.* The following table gives particulars as to the revenue, expenditure, and capital cost of the metropolitan sewerage systems for 1901 and 1908-12:—

SYDNEY SEWERAGE SYSTEMS.—REVENUE, EXPENDITURE, AND CAPITAL COST, 1901 and 1908-12.

Year ended the 30th June.	Revenue.	Working Expenses.	Capital Cost, exclusive of Items on which Interest is not Charged.	Percentage of Expenditure to Revenue.	Percentage of Revenue on Capital Cost.	Interest Payable on Capital Cost.	Profit or Loss after Payment of Working Expenses and Interest.
	£	£	£	%	%	£	£
1901 ...	125,290	45,395	3,066,147	36.23	4.05	106,475	*—26,580
1908 ...	216,258	64,020	4,053,591	29.60	5.33	148,142	4,096
1909 ...	214,212†	68,575	4,225,239	32.01	5.06	151,317	— 5,680
1910 ...	223,131	70,851	4,351,381	31.75	5.12	151,943	337
1911 ...	234,208	79,636	4,496,290	34.00	5.20	159,070	— 4,498
1912 ...	250,826	82,246	4,769,449	32.78	5.25	166,771	1,809

* Represents a loss. † Rate reduced from 10d. to 9½d. from 1st July, 1908.

(ii.) *Number of Houses Drained, Population, and Length of Sewers in Sydney Metropolitan Sewerage Systems.* The following table gives particulars as to the number of houses drained, the population, and the length of sewers within the Sydney metropolitan area for 1901 and 1908 to 1912:—

SYDNEY SEWERAGE SYSTEMS.—NUMBER OF HOUSES DRAINED, POPULATION, AND LENGTH OF SEWERS, 1901 and 1908-12.

Year ended the 30th June.	Number of Houses Drained.	Estimated Population Served.	Total Length of Sewers.	Total Length of Storm-water Drains.	Ventilating Shafts Erected.	Sewers Ventilated.
	No.	No.	Miles.	Miles.	Feet.	Miles.
1901 ...	75,416	370,000	515.62	25.91	194,667	450
1908 ...	96,384	481,920	724.37	46.94	286,000	684
1909 ...	99,442	497,210	760.16	47.30	299,910	714
1910 ...	102,896	514,480	793.55	47.82	344,820	756
1911 ...	108,012	540,060	825.20	48.85	376,900	795
1912 ...	110,737	553,685	863.29	49.63	382,654	809

8. **The Hunter District Water Supply and Sewerage Board.**—The waterworks of the Lower Hunter were constructed by the Government under the provisions of the Country Towns Water Supply and Sewerage Act of 1880. In 1892 a special Act was passed establishing an independent Board to control the water-supply works. Fuller reference is made to the constitution of this Board and to the municipalities and incorporated areas under its jurisdiction in previous issues of the Year Book. (See Year Book No. 5, p. 988.)

(i.) *Description of Waterworks.* The water supply is pumped from the Hunter River about a mile and a half up stream from West Maitland into a settling-tank of 1,390,500 gallons capacity, thence through filter beds into a clear water tank holding 589,500 gallons, and a storage reservoir of 172,408,100 gallons capacity. It is then pumped from the clear water tank into two summit reservoirs, one of which supplies East and West Maitland, Morpeth, and Maitland, while the other supplies the other districts under the control of the Board. In these districts there are nine service reservoirs, having a total capacity of nearly 4,000,000 gallons supplied by gravitation. On the hill at Newcastle there is also a high-level iron tank with a capacity of 20,000 gallons, which is supplied by a small pumping engine on the roof of the Newcastle reservoir. The total length of water mains is 346 miles.

(ii.) *Water Supply, Capital Cost, Revenue, and Expenditure.* By the Act of 1892 referred to above and an Amending Act of 1894 the capital debt of the Board was to be liquidated by annual instalments distributed over 100 years with interest at $3\frac{1}{2}$ per cent. By a further amending Act of 1897 the repayment of expenditure on permanent works was abrogated, and the annual instalments were to be paid in liquidation of the cost of renewable works to be fixed by the Government from year to year. The capital debt of the Board to the Government at 30th June, 1912, was in respect of water supply £492,354, and £237,497 in respect of sewerage. In the subjoined table particulars are given as to the revenue and expenditure, and also as to the number of houses and population supplied in 1901 and 1908 to 1912:—

PARTICULARS OF THE HUNTER DISTRICT WATER SUPPLY, 1901 and 1908-12.

Year ended 30th June.	Revenue.	Working Expenses (including Interest).	Houses Supplied.	Estimated Population Served.	Supply.	
					Daily Average.	Total.
	£	£	No.	No.	1000 Gallons.	1000 Gallons.
1901	27,405	30,948	9,086	45,400	1,005	366,889
1908	45,695	39,615	14,457	72,285	1,654	603,755
1909	43,395	41,184	15,679	78,395	1,766	644,689
1910	46,767	43,126	16,446	82,230	1,650	602,497
1911	45,711	45,420	17,164	85,820	1,850	675,214
1912	47,788	47,920*	17,796	88,980	2,026	739,539

* Inclusive of an instalment of £10,652 to the sinking fund for reconstruction of renewable works.

The average daily consumption of water for all purposes per inhabitant was 22.77 gallons during the year 1912, as against 21.55 gallons during the previous year.

(iii.) *Sewerage Works.*—Considerable progress has been made by the Department of Public Works with the construction of the sewerage works for Newcastle and suburbs. The scheme is designed on the separate system, and will deal with the sewage partly by gravitation and partly by pumping. Up to the 30th June, 1912, about 37 miles of sewers, connecting with 2424 separate properties, were under the control of the Board. For the financial year 1911-12 the revenue was £10,999 and the expenditure £13,334, the latter amount including a £1324 instalment to the Sinking Fund for the reconstruction of renewable works.

9. **Water Supply and Sewerage in Country Towns.**—With the object of assisting municipalities to construct systems of water supply and sewerage, the Country Towns Water Supply and Sewerage Act of 1880 was passed, but has since been amended by the Acts of 1887, 1894 and 1905. The principal provisions of these Acts are more fully dealt with in previous issues of this book. (See Year Book No. 5, p. 989.)

(i.) *Waterworks.* Up to the 30th June, 1911, forty-seven country municipalities had availed themselves of the privileges of the Acts as regards waterworks, all of which at that date had been completed and handed over by the Government. The total amount expended on these works was £838,829, and the total of the sums payable annually for a period of 100 years was £31,546, including interest at the rate of $3\frac{1}{2}$ per cent., the first repayments having become due at various dates ranging from the end of the year 1893 to the end of 1908. In the calculation of these repayments the interest on the expenditure has been added, and any payments by the councils, as well as sums remitted under the authority of the Act, have been deducted. A number of other municipalities have constructed works out of their own resources.

(ii.) *Sewerage Works.* Only ten municipal councils have taken advantage of the Act providing for the construction of sewerage works in country towns. On the 30th June, 1911, the capital debt of these systems was £119,879, the amount payable annually to the Government being £4428. Other sewerage systems are in existence in several places, but with few exceptions the operations have been on a small scale.

10. **Board of Fire Commissioners of New South Wales.**—Reference has been made in the section of this book dealing with the subject of *Private Finance* (see page 868) to the constitution of the Board of Fire Commissioners of New South Wales, which has now superseded the Metropolitan and all other Fire Brigade Boards in that state.

(i.) *Receipts and Disbursements of Board of Fire Commissioners of New South Wales.* The subjoined table shews the actual receipts and disbursements of the Board, for the years 1910, 1911 and 1912:—

NEW SOUTH WALES BOARD OF FIRE COMMISSIONERS.—RECEIPTS AND DISBURSEMENTS FOR SYDNEY FIRE DISTRICT, 1910, 1911, and 1912.

Year.	Receipts.						Disbursements.
	From Government.	From Municipalities.	From Fire Insurance Companies.	From Firms.	From other Sources.	Total.	
	£	£	£	£	£	£	£
1910 ...	21,624	21,624	21,181	442	607	65,478	58,168
1911 ...	21,643	21,643	21,198	444	1,145	66,073	60,667
1912 ...	30,411	30,419	30,078	240	3,934	95,082	90,453

With reference to the preceding table, under the "Fire Brigades Act 1909," by which the New South Wales Board of Fire Commissioners was constituted and which came into operation on 1st January, 1910, insurance companies do not now, as formerly, return the amount of their risks, but give in lieu thereof the amount of premiums received, which forms the basis of their contribution towards the revenue of the Board. By this Act also, firms which effect insurances with companies not registered in New South Wales are likewise required to make contributions on account of the premiums paid to such companies, which is the first instance of this class of insurer being compelled to share the expense of local advantages, which had hitherto been available free of cost. A fuller description of the principal provisions of this Act will be found in previous issues of this book (see Year Book No. 5, page 990). The Sydney fire district includes the City of Sydney and suburbs, comprising a total area of $152\frac{1}{2}$ square miles.

11. **Sydney Harbour Trust.**—The establishment of this Trust was the direct outcome of the outbreak of bubonic plague in the port of Sydney in the early part of the year 1900. It was proved that this disease was due to the introduction of plague-stricken rats in vessels arriving from ports in which the disease had made its appearance. As a consequence the whole of the foreshores of the harbour, together with certain adjoining wharves, stores, dwelling houses, and other properties, were vested in a body of trustees. The Trust was established by an Act which came into force on the 11th February, 1901. The powers and duties of the Trust have been dealt with in previous issues of this book, together with some of the more important improvements carried out by the Commissioners. (See Year Book No. 5, p. 990.)

(i.) *Revenue, Expenditure, and Capital Cost.* The subjoined table gives particulars of the revenue and expenditure of the Trust, and also shows the total capital debt for properties, etc., vested in the Commissioners, the amount of interest payable on the debt, and the balance of revenue after deducting expenditure, interest, and the amount of the Commissioners' salaries:—

SYDNEY HARBOUR TRUST.—REVENUE, EXPENDITURE, CAPITAL DEBT, INTEREST AND BALANCE, 1901 and 1908-12.

Year ended the 30th June—	Revenue.				Expenditure.	Total Capital Debt.	Interest.†	Balance.
	Wharfage & Harbour Rates.	Tonnage Rates & Berthing Charges	From Other Sources.	Total.				
	£	£	£	£	£	£	£	£
1901* ...	42,784	3,208	12,324	58,316	11,275	4,692,782	55,554	— 8,513
1908 ...	183,045	12,525	131,955	327,525	90,782	5,227,360	189,265	47,478
1909 ...	183,753	11,539	139,076	334,368	103,882	5,338,108	191,532	38,954
1910 ...	183,094	11,563	142,390	337,047	142,763‡	5,482,060	191,246	3,038
1911 ...	212,061	15,536	146,158	373,755	143,181§	5,627,756	200,845	29,729
1912 ...	234,731	18,163	158,755	411,649	143,170||	6,136,671	212,842	\$56,398

* For the period from 11th February to the 30th June, 1901. † The rate of interest charged each year is the average rate on the total capital debt of the State, which varies. — Represents a loss. ‡ Including expenditure for the renewal, replacement or reconstruction of wharves or buildings, viz., £34,970 in 1910, £23,650 in 1911, and £38,446 in 1912. § Including £761 repaid to previous revenue votes.

The revenue for the year 1911-12 shows an increase of £37,894 on that for the previous year, and is the highest attained since the formation of the Trust. The working expenses for the year shewed a decrease of £4807 on the previous year, but the expenditure on renewals, etc., increased in the same period by £4796, leaving a small decrease in the total expenditure of £11.

(ii.) *Dredging and Towing.* The subjoined statement gives particulars of the dredging and towing done by the dredges and tug-boats owned by the Trust:—

SYDNEY HARBOUR TRUST.—PARTICULARS OF DREDGING AND TOWING, 1901 and 1908-12.

Year.	Dredging.			Towing Dredged Material.		
	Tons Dredged.	Total Expenditure.	Expenditure per Ton.	Miles run Towing.	Total Expenditure in Towing.	Expenditure per Mile Towing.
	Tons.	£	Pence.	Miles.	£	Pence.
1901 ...	317,500	3,696	2.79	29,277	2,849	23.35
1908 ...	504,760	8,915	4.24	45,485	6,940	36.62
1909 ...	434,504	13,066	7.22	38,699	6,634	41.14
1910 ...	448,650	11,495	6.15	33,048	5,519	40.08
1911 ...	1,675,945	19,058	2.72	38,372	5,442	34.04
1912 ...	1,671,540	24,036	3.45	30,163	6,636	52.80

§ 3. Victoria.

1. Development of Types of Local Authorities.—In Victoria there are now two types of municipal institutions, (a) boroughs, including cities and towns, and (b) shires, and although they are now dealt with by the same Act, their origin was distinct, and in the early days of their development they were provided for by independent enactments. Melbourne and Geelong, the latter of which was for many years the second largest town in the State, having been incorporated under special statutes prior to the establishment of a general system of local government, are not subject to the provisions of the Local Government Acts except in a few comparatively unimportant details. Melbourne was incorporated as a town in 1842, and as a city in 1847; Geelong was incorporated as a town in 1849, and proclaimed a city on 14th December, 1910.

The earlier history of legislation in Victoria relative to Local Government, more especially with reference to the institution of Road Districts, their displacement by Shires, and the constitution of Urban Municipal Districts and Boroughs, has been fully dealt with in previous issues. (See Year Book No. 5, p. 992.)

2. Local Government Systems now in Operation.—Local government is now administered under the Act of 1903 throughout the whole of the State, with the exception of about 6000 square miles in the mountainous parts of the county of Wonnangatta, and the whole of French Island.

(i.) *Constitution of Municipalities.* Provision is made for the continuation of municipalities established under previous Acts and for the constitution of new ones.

(a) *Shires.* Any part of the State containing ratable property yielding, upon a rate not exceeding one shilling in the pound, a sum of £1500 may be constituted a shire upon petition of at least fifty inhabitants.

(b) *Boroughs.* Any part of the State, not exceeding in area nine square miles, and having no point distant more than six miles from any other point, and containing a population of not less than 500 and a ratable property yielding, upon a rate not exceeding one shilling in the pound, a sum of £300, may be constituted a borough upon petition of at least 250 resident householders. Any borough having during the preceding financial year a revenue of £10,000 may be declared a town, or having a revenue of £20,000 may be declared a city upon petition under the common seal of such borough. Provision is also made for severing any part of a municipality and annexing the same to an adjoining municipality: for dividing municipalities into any number of subdivisions not exceeding eight; and for uniting two or more boroughs which form one continuous area so as to form one borough.

(c) *Townships.* Upon petition signed by not less than twenty-five ratepayers resident in any portion not exceeding three square miles in extent of any shire and distant more than ten miles from the boundaries of the city of Melbourne, the Governor may, with the consent of the municipal council, proclaim such portion a township.

(ii.) *Municipal Councils, etc.* Considerations of space prevent more than a passing reference to the following subjects which were dealt with in previous issues of this book:—The constitution of municipal councils, their functions and powers, including the power of raising loans, the qualifications necessary for the exercise of the municipal franchise, and the definition of ratable and unratable property. (See Year Book No. 5, pp. 994 to 996.)

(iii.) *Endowment.* The legislation dealing with municipal endowment prior to 1907 is referred to in previous issues. (See Year Book No. 5, p. 996.) In 1907, under the Municipal Endowment and Reclassification of Shires Act of that year, a new classification

was adopted under which the amount of the endowment is to be allocated. In addition to the endowment of £75,000 (increased to £100,000 from the 1st July, 1907), the municipalities received from the Government during the financial year 1911-12 a sum of £82,673 out of the Licensing Act Fund as the equivalent for (a) fees for licenses, (b) fees for the registration of brewers and spirit merchants, and (c) fines, penalties, and forfeitures incurred under the Licensing Act 1876. Under the Act of 1907 the endowment of £100,000 is payable in equal moieties in March and September of each year. No city or town is entitled to receive any part of the endowment. The distribution amongst the boroughs and shires is based on the amount of general and extra rates received in the twelve months ending on the preceding 30th September according to the following scale:—

VICTORIA.—ENDOWMENT OF BOROUGHS AND SHIRES, 1911-12.

To every Borough or 1st Class Shire, 3s. in the £	To every 4th Class Shire, 8s. in the £
" " 2nd Class Shire 5s. " "	" " 5th " " 10s. " "
" " 3rd " " 6s. " " " "	" " 6th " " 12s. " "

For the three financial years commencing the 1st July, 1907, however, the amounts were definitely fixed by Act No. 2129, and for the financial years 1910-11 and 1911-12 by Acts No. 2267 and 2334 respectively.

3. Boroughs and Shires.—Number, Population, and Value of Ratable Property.

—The following table shews the number of cities, towns, boroughs, and shires, their estimated population, the number of ratepayers and dwellings, and the value of ratable property for the years 1901 and 1908-12 inclusive:—

VICTORIA.—PARTICULARS OF MUNICIPALITIES, 1901 and 1908-12.

Financial Year.	Number of Municipalities.	Estimated Population.	Number of Ratepayers (both sexes).	Estimated Number of Dwellings.	Estimated Value of Real Property.	
					Total.	Annual.
CITIES, TOWNS, AND BOROUGHES.						
1901	58	627,237	153,783	130,358	£ 67,302,423	£ 4,765,632
1908	60	711,000	176,420	153,629	103,666,178	5,944,691
1909	60	717,600	178,928	156,099	106,149,960	6,080,447
1910	60	728,500	183,419	159,478	108,863,963	6,232,091
1911	60	*742,070	187,562	162,489	114,113,507	6,508,544
1912	†61	742,070	194,391	†	119,400,893	6,804,697
SHIRES.						
1901	150	571,683	159,128	122,645	£ 106,839,331	£ 5,771,865
1908	146	553,000	152,973	121,465	129,059,488	6,694,209
1909	146	558,400	155,492	123,459	136,538,811	7,043,511
1910	146	563,500	159,410	124,739	143,142,655	7,332,397
1911	146	*568,494	163,916	126,951	150,970,220	7,716,815
1912	146	568,494	168,229	†	155,677,624	7,969,963

* Census figures. † Coburg was proclaimed a town in September, 1912. ‡ Not available.

4. Municipal Assets and Liabilities.—The assets of municipalities may be classified under three heads—(a) the municipal fund, (b) the loan fund, and (c) property; the liabilities under two heads—(a) the municipal fund, and (b) the loan fund. The following table shews the amount of municipal assets and liabilities for the years 1901 and 1907 to 1911:—

VICTORIA.—MUNICIPAL ASSETS AND LIABILITIES, 1901 and 1907-11.

Items.	1901.	1907.	1908.	1909.	1910.	1911.
ASSETS.						
	£	£	£	£	£	£
MUNICIPAL FUND—						
Uncollected rates ...	187,205	112,435	116,223	114,598	110,676	105,241
Other assets ...	122,581	196,048	182,790	267,944	350,092	473,054
LOAN FUND—						
(a) Sinking funds—						
Amount at credit ...	675,310	772,662	796,272	812,920	834,295	893,528
Arrears due ...	1,391	3,616	2,806	2,827	3,286	1,182
(b) Unexpended balances ...	394,136	325,901	220,674	106,852	345,237	264,048
PROPERTY—						
Buildings, markets, etc. ...	2,507,441	2,697,701	2,826,394	2,992,809	3,149,476	3,246,854
Waterworks ...	197,675	223,687	220,669	207,451	202,210	207,365
Gasworks ...	63,732	66,269	66,638	57,399	70,687	72,274
Total ...	4,149,471	4,398,319	4,432,466	4,562,800	5,066,009	5,263,546
LIABILITIES.						
	£	£	£	£	£	£
MUNICIPAL FUND—						
Arrears due sinking funds ...	1,021	3,616	2,806	2,827	3,286	1,182
Overdue interest ...	9,413	17,060	18,535	15,639	15,750	11,997
Bank overdrafts ...	157,046	94,825	122,453	120,705	133,237	165,275
Temporary Government advances ...	20,901	...	...	...	...	...
Other liabilities ...	142,530	179,342	194,283	233,359	293,089	*357,732
LOAN FUNDS—						
Loans outstanding ...	4,253,304	4,442,713	4,437,673	4,416,103	4,767,138	4,881,984
Due on loan contracts ...	52,826	39,726	88,086	49,452	45,089	92,363
Total ...	4,637,041	4,777,282	4,863,896	4,838,085	5,257,589	5,460,523

* Including £100,351 due on current contracts.

5. Revenue and Expenditure of Municipalities.—The following table shews the revenue from various sources, and the expenditure under various heads, of municipalities during the years 1901 and 1907 to 1911:—

VICTORIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES, 1901 and 1907-11.

Items.	1901.	1907.	1908.	1909.	1910.	1911.
SOURCES OF REVENUE.						
	£	£	£	£	£	£
Taxation ...						
(Rates ...)	722,346	887,580	902,741	946,956	999,799	1,046,943
(Licenses ...)	104,499	106,742	106,758	101,682	102,066	100,845
(Dog fees ...)	14,965	17,455	17,628	18,751	19,296	19,833
(Market and weighbridge dues ...)	49,623	57,190	57,386	68,014	65,739	63,071
Government endowments and grants ...	175,972	117,304	172,648	175,601	187,323	157,141
Contributions for streets, etc. ...	24,999	30,816	34,246	35,173	47,532	47,342
Sanitary charges ...	48,253	56,918	58,072	59,966	62,720	66,389
Rents ...	54,117	66,601	67,387	69,842	77,958	79,263
Other sources ...	89,210	163,825	208,403	195,831	207,181	237,601
Total ...	1,283,984	1,504,431	1,625,269	1,671,816	1,769,614	1,818,428
HEADS OF EXPENDITURE.						
	£	£	£	£	£	£
Salaries, etc. ...	139,270	147,933	152,302	158,436	163,435	168,303
Sanitary work street cleaning, etc. ...	132,542	134,632	142,769	150,964	159,571	178,623
Lighting ...	86,059	76,217	79,832	82,354	83,972	87,341
Fire brigades' contributions ...	16,769	17,144	20,724	29,051	23,223	23,120
Public works { Construction ...	244,315	266,658	313,607	288,869	335,446	311,065
{ Maintenance ...	345,334	441,335	474,188	490,341	548,583	571,254
Formation of private streets, etc. ...	23,350	28,296	32,718	37,888	32,163	46,849
Redemption of loans ...	27,745	54,998	60,568	58,263	46,439	66,860
Interest on loans ...	197,810	196,965	198,632	201,199	206,355	213,752
Charities ...	13,407	13,401	14,666	15,241	15,589	15,785
Other expenditure ...	103,403	156,894	187,830	173,154	170,840	187,514
Total ...	1,330,004	1,534,473	1,677,836	1,678,760	1,785,616	1,870,466

6. **The Melbourne and Metropolitan Board of Works.**—This Board was established by an Act of 1890, and entered upon its duties in March, 1891. The Board consists of forty members, one of whom is a chairman elected every four years by the other members. Nine members are elected by the Melbourne City Council, four by the South Melbourne Council, three by the Prahran, two each by the Fitzroy, Richmond, St. Kilda, and Collingwood, and one each by the other suburban municipal councils returning a representative. The district over which the Board exercises control consists of twelve cities, eight towns, two shires, and parts of three others, or twenty-five municipalities in all, comprising a total area of 109,009 acres, and containing an estimated population on the 31st December, 1912, of 614,300 (including those supplied with water outside the Board's area). The waterworks for the supply of Melbourne and suburbs were originally carried out by the Government, which had for that purpose contracted loans amounting to £2,389,934; these works were vested in the Board in 1891. The primary object of the creation of the Board was not, however, to take over these works, but was to supply the long called for and pressing want of a sewerage system for the metropolis. To carry out its work the Board is authorised to borrow £8,750,000, exclusive of the loans contracted by the Government for the purpose of waterworks and taken over by the Board. The liability on Government loans on the 30th June, 1912, was £1,688,663 and for loans raised by the Board was £9,296,053. The Board is still empowered to borrow £155,218 before reaching the limit of its borrowing powers.

(i.) *Total Cost of Water Supply and Sewerage.* The subjoined table shews the total cost of construction and maintenance of water supply and sewerage from 1853 to 1912.

MELBOURNE AND METROPOLITAN BOARD OF WORKS.—TOTAL COST OF CONSTRUCTION AND MAINTENANCE OF WATER SUPPLY AND SEWERAGE, 1853 to 1912.

Period.	Water Supply.		Sewerage.			Total.
	Con- struction.	Main- tenance.*	Con- struction.	Main- tenance.	Working Expenses.	
	£	£	£	£	£	£
1853 to 1890-1 ...	3,378,246	149,622	...	...	...	3,527,868
1891-2 to 1900-1 ...	336,957	165,124	3,307,764	33,698*	32,525*	3,876,068
1901-2 to 1910-11	299,045	204,045	2,959,997	68,025	246,483	3,777,595
1911-12 ...	126,671	28,447	195,301	6,667	40,714	397,800
Total ...	4,140,919	547,238	6,463,062	108,390	319,722	11,579,331

* From the 30th June, 1897, to the 30th June, 1901.

(ii.) *Revenue and Expenditure of Melbourne and Metropolitan Board of Works.* The following table shews the actual receipts and expenditure, and also the loan receipts and expenditure of the Board during 1901-2 and 1908-12:—

MELBOURNE AND METROPOLITAN BOARD OF WORKS.—REVENUE AND EXPENDITURE DURING EACH YEAR, 1901-2 and 1908-12.

Particulars.	1901-2.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
ORDINARY RECEIPTS.						
	£	£	£	£	£	£
Water supply	171,956	229,674	241,790	248,356	253,002	267,917
Sewerage	124,666	226,609	242,236	253,756	267,444	272,365
Live stock—Metropolitan farm	19,929	39,132	22,153	31,289	35,016	63,225
Interest { Water supply		129	15	138	830	953
{ Sewerage	17,448	16,562	15,929	10,229	8,995	8,885
Total	334,029	512,106	522,183	543,768	565,287	613,345

ORDINARY EXPENDITURE.

General management	33,621	33,267	33,984	34,863	35,779	40,104
Live stock—Metropolitan farm	16,702	41,586	20,316	17,900	19,336	46,283
Maintenance { Water supply	22,205	25,018	24,643	24,944	25,016	30,234
{ Sewerage	24,396	35,588	38,016	42,921	45,665	47,797
Interest { Water supply	102,670	101,044	102,297	101,578	105,760	112,886
{ Sewerage	192,952	270,130	280,647	286,655	293,608	297,962
Total	392,546	506,583	499,903	508,861	525,164	575,266

LOAN RECEIPTS.

Water supply	1,636	6,725	2,435	5,272	4,788	5,982
Sewerage	88,425	72,415	67,771	61,509	56,313	59,907
Proceeds of loans	396,238	307,500	429,595	257,853	291,310	322,223
Miscellaneous		14,865	15,246	9,104	9,238	12,399
Total	486,299	401,505	515,047	333,758	361,649	400,511

LOAN EXPENDITURE.

Water supply construction	17,058	40,183	67,271	35,984	98,145	133,149
Sewerage construction	410,760	309,194	272,508	331,214	286,085	245,911
Expenses in floating and redemption of loans	5,200	34	229,189	2,677	2,936	5,393
Miscellaneous	4,293	18,655	24,961	18,002	26,288	35,638
Total	428,725	368,066	593,929	387,877	413,404	420,091

* Excess of stock distribution (£7020) over purchases (£2727).

7. Melbourne Metropolitan Water Supply.—In December, 1857, the construction of the Yan Yean Reservoir system was completed. A description of the conditions that prevailed in Melbourne prior to that date is given in previous issues of the Year Book.

(i.) *Development of System.* The following statement shews the development which has taken place in the water supply system of Melbourne during the fifty-five years since its inception:—

MELBOURNE WATER SUPPLY SYSTEM, 1857 to 1912.

Year.	Served Population.*	Capital Cost.	Charge per 1000 Gallons.	Rate in £	Mains & Pipes, Mileage of—	Supply in Gallons, Averaged daily.
		£				
1857	95,442	748,974	10/- and 6/-	1/-	104	3,250,000
1912	614,300	4,140,919	1/-	7d.	1,424	38,506,855

* On the 31st December.

(ii.) *Description of Water Supply Systems.* The water supply of Melbourne consists of two main systems—the Yan Yean and the Maroondah.

(a) *The Yan Yean System* is the main source of supply. It commences by collecting the water from the Silvery and Wallaby Creek valleys, to the north of Mount Disappointment 2700 feet high, which forms one of the prominent heights of the main Dividing Range in Victoria. The waters of the Silvery Creek are brought by means of an aqueduct a little over eight miles long, to a weir at the head of the Wallaby Creek aqueduct, which carries the combined waters of the two creeks for a distance of five and a quarter miles, and discharges over the crest of the Dividing Range at a height of 1694 feet above sea level, and then drops a height of 133 feet in 683 feet into Jack's Creek, one of the branches of the Plenty River. From its drop into Jack's Creek the water follows the natural bed of the stream for about three miles to the Tourourrong reservoir, which has a capacity of 60,000,000 gallons. From Tourourrong the Clear Water Channel carries the water for a distance of four and three-quarter miles to the old Plenty inlet channel of the Yan Yean reservoir. The Yan Yean reservoir, which is twenty-two miles from the city, is formed by the construction of an earthen bank 49 chains long, 30 feet high, 20 feet wide on top, with a slope next the water of three to one, and an outside slope of two to one. The reservoir, when full, covers an area of 1360 acres, with a maximum depth of 26 feet, and an average depth of 18 feet. Its total capacity is 6,400,000,000 gallons, of which 5,400,000,000 are available for consumption. From the Yan Yean reservoir to the Pipe Head reservoir at Morang, a distance of seven miles, an aqueduct capable of delivering 93,000,000 gallons a day has been constructed. From the Morang reservoir, mains carry the water a distance of seven miles to the storage reservoir within the metropolitan area, at Preston. The No. 1 Preston reservoir is 20 feet deep, and holds 16,000,000 gallons. A second reservoir of 25,000,000 gallons capacity was built during 1908-9, the walls being of reinforced concrete. These are the main distributing reservoirs of the central city supply.

(b) *Maroondah System.* The water for this system is obtained from the Maroondah River, a tributary of the Yarra. The Maroondah River is the principal stream diverted, but its contribution to the aqueduct flow is supplemented by diversions from tributary creeks. A temporary weir of Portland cement concrete has been constructed across the Maroondah River, from which point the water is led in an aqueduct forty-one miles long to the Preston reservoir, where it joins the water from the Yan Yean system. The channel is now capable of delivering 29,000,000 gallons daily. The valleys are crossed by wrought-iron syphons, and with the exception of the Plenty River, which is crossed on a wrought-iron girder bridge, all the syphons are laid under the beds of the streams. The total cost of the Maroondah system to 30th June, 1912, was £778,221.

(c) *High Level System.* Besides the Yan Yean and Maroondah systems, the high levels of the eastern suburbs of Melbourne are provided for by a direct main from the Yan Yean reservoir. This main is 20½ miles long, and cost to the

30th June, 1912, £199,594. The discharge is about 9,000,000 gallons per day. There is a storage reservoir of 9,000,000 gallons capacity at Surrey Hills, costing to June 30th, 1912, £19,953.

(d) *O'Shanassy Supply.* The O'Shanassy River is a tributary of the Yarra. It is proposed to divert the waters of this river by an open aqueduct and pipe line of an aggregate length of about 48½ miles, delivering water by way of Mitcham. The total capacity of the scheme is to be 20,000,000 gallons per day, but capable of enlargement to 60,000,000 gallons. The works are in full progress, and the scheme is estimated to cost £450,000. The watershed of the O'Shanassy River, containing 32,650 acres, has been excised from the permanent forests area and a crown grant was issued to the Board on the 28th January, 1910.

(iii.) *Catchment Areas, Reservoirs, and Aqueducts.* (a) *Drainage Areas.* The whole of the catchment areas are absolutely free from population, cultivation, or stock grazing, and are under the complete control of the Metropolitan Board of Works. The present drainage areas from which the water is delivered are as follows:—

MELBOURNE WATER SUPPLY.—CATCHMENT AREA, 1912.

	Silver and Wallaby Creeks.	Plenty River and Jack's Ck.	Yan Yean Reservoir Catchment.	Maroondah Catchment.	Total.
Area in acres	12,000	12,000	5,000	40,000	69,000

All the water is delivered by gravitation, no pumping being required in any portion of the area supplied.

(b) *Storage Reservoirs.* In connection with distribution there are ten service reservoirs having a total capacity of 95,000,000 gallons. The total daily quantity of water which can be sent into Melbourne is as follows:—

System	Yan Yean.	Maroondah.	High Level Main.	Total Supply.
Gallons per day	33,000,000	29,000,000	9,000,000	71,000,000

(iv.) *Quantity of Water, Number of Houses, and Population Supplied.* The following table gives various particulars for the years 1901 and 1908-12, shewing the increase in the supply of water in Melbourne and suburbs:—

MELBOURNE WATERWORKS.—NUMBER OF HOUSES, POPULATION, AND WATER SUPPLIED, 1901 and 1908-12.

Year Ended 30th June.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year ended 30th June.	Average Daily Supply.		Rate Levied.	Assessments of Tenements Served by Metropolitan Water Supply.
					Per House.	Per Head of Estimated Population.		
	No.	No.	,000 Gallons.	,000 Gallons.	Gallons.	Gallons.		£
1901	104,548	491,780	28,732	10,487,007	274.8	53.4	6d. in the £	3,479,721
1908	116,781	536,540	33,654	12,317,239	288.2	62.2		4,484,868
1909	119,650	549,690	31,828	11,617,355	266.0	57.9	7d. in the £	4,672,324
1910	123,227	565,010	34,508	12,595,501	280.0	61.1		4,789,265
1911	128,036	581,500	32,840	11,986,503	256.5	56.5		5,045,848
1912	133,122	594,250	38,507	14,093,509	289.3	64.8		5,882,101

(v.) *Total Cost of Construction, Revenue, Expenditure and Net Profits, 1854 to 1912.* The following table shews the total cost of construction, the revenue, expenditure, and net profits for various periods up to 30th June, 1911, and for the financial year 1911-12:—

**MELBOURNE WATERWORKS.—CONSTRUCTION, COST, REVENUE, EXPENDITURE,
AND NET PROFITS, 1854 to 1912.**

Period.	Capital Cost. ¹	Annual Revenue. ²	Cost of Maintenance and Manage- ment. ³	Percentage of Working Charges to Revenue.	Interest. ⁴	Surplus.
	£	£	£	%	£	£
Total to 1890-1	3,378,246	3,150,055	420,833	...	1,021,676	1,707,546
1891-2 to 1900-1	336,957	1,686,025	367,506	21.97	1,021,181	297,338
1901-2 to 1910-11	299,045	2,054,355	384,871	18.73	1,026,362	643,122
1911-12	126,671	277,305	50,879	18.35	111,933	114,493
Total ...	4,140,919	7,167,740	1,224,089	...	3,181,152	2,762,499

1. Works commenced in 1853. 2. Revenue commenced in 1854. 3. Returns for expenditure commenced in 1859. 4. First interest paid in 1856.

5. Melbourne Sewerage.—As stated above, the chief object of the creation of the Melbourne and Metropolitan Board was to carry out an efficient system of sewerage. Old Melbourne used to be a city of cesspits, and it was not until the latter sixties that these were abolished, filled up, and the movable pan system gradually adopted throughout the whole metropolitan area with night removal. The cost of removal in 1894 was about £90,000, equal to a capital expenditure of £1,750,000. This objectionable system has been displaced by the water carriage system throughout the greater portion of the metropolis, and in other parts the work of reticulation is now proceeding.

(i.) *Description of Sewerage Systems.* The whole of the sewage of the metropolis is being gradually collected by means of two principal main sewers and a subsidiary main leading to the pumping station at Spotswood. A description of the scheme may be found in previous issues. (See Year Book No. 5, p. 1007.) On the 30th June, 1912, the sewerage system had been practically completed in the following districts:—Port Melbourne, South Melbourne, Melbourne (except very small portions of Flemington and Kensington), Richmond, Prahran, Collingwood, Fitzroy, and very nearly the whole of Essendon, St. Kilda and Brighton. The greater part of Malvern, Footscray and Williamstown had also been dealt with, together with the thickly populated portions of Caulfield, Camberwell, Kew, Hawthorn, Brunswick, Northcote, Coburg, Preston, and Moorabbin, besides small portions of Nunawading and Heidelberg.

(ii.) *Metropolitan Sewage Farm.* The farm contains 9152 acres, situated on the western side of the Werribee River. The price paid for the land was £17 10s. per acre (including compensation for severance). The cost of the farm to the 30th June, 1912, was £472,602. About 31,066,653 gallons of sewage had to be disposed of every twenty-four hours during the year in irrigating the fields. It is spread over properly-prepared and sown blocks of land by a series of mains and lateral carriers. The blocks are laid down with grass and lucerne, on which sheep and cattle are depastured. During the financial year 1911-12, 49,721 sheep were bought, the profit from that source being £11,298. Cattle to the number of 1007 were purchased, the profit for the year on cattle being £2774.

(iii.) *House Connections.* The work of house connections with the sewerage system is carried out under a carefully prepared by-law. Under the Amending Act of 1897, after a property has been declared to be a sewered property, the owner has several options. (a) He may submit a plan of his house connections for approval, and on approval being given, may agree to carry out the work within one month. (b) He may submit a plan, for which, if approved of, he may ask for an estimate of the cost of carrying out. This the Board is bound to supply, and then the owner may either carry out the work himself or ask the Board to carry out the work, which it must do for the estimated price, whether the work costs less or more. (c) On default of the owner the Board may carry out the

work, and at the request of the owner accept payment by forty quarterly instalments, bearing interest on such portion as from time to time remains unpaid at the rate of 5 per cent.

(iv.) *Number of Houses Connected, Capital Cost, Revenue and Expenditure.* The following table gives particulars as to the number of houses connected to the sewerage system, the total capital cost, and the receipts and disbursements during 1901 and 1908-12:—

MELBOURNE SEWERAGE WORKS.—TENEMENTS CONNECTED, CAPITAL COST, REVENUE, MAINTENANCE AND WORKING EXPENSES, 1901-2 and 1908-12.

Year.	Number of Houses Connected.	Capital Cost.	Revenue.			Maintenance and Working Expenses.
			From Rates.	From other Sources.	Total.	
	No.	£	£	£	£	£
1901-2 ...	47,172	3,610,225	126,725	10,968	137,693	24,336
1907-8 ...	94,067	5,520,308	222,134	—2,197*	219,937	35,225
1908-9 ...	99,955	5,741,208	234,229	9,850	244,079	35,769
1909-10 ...	105,093	6,025,030	247,632	12,843	260,475	38,085
1910-11 ...	112,293	6,267,761	260,529	15,200	275,728	46,904
1911-12 ...	118,850	6,463,062	271,682	18,042	289,724	47,381

* Loss on sheep, £6247.

9. **Water Supply in Country Towns and Districts.**—By the Water Act 1905, which came into operation on the 1st May, 1906, the control and management of all Irrigation Trusts, with one exception, and of a number of waterworks and water supply districts were centralised, and their works and property vested in the State Rivers and Water Supply Commission. The powers and duties of this Commission were extended by the Water Act 1909, the whole of the Water Supply Department being now merged in the Commission. Further information with regard to this Commission and to the works and districts under its control are given in the section in this book dealing with Water Conservation and Irrigation. There are, however, in different parts of Victoria a number of other waterworks which are concerned chiefly with domestic supply, and which are controlled by local authorities, i.e., by Waterworks Trusts or by municipal corporations. These works are constructed out of moneys either granted or lent by the State Government. The following table gives particulars as to the waterworks under the control of Trusts and municipal corporations for the years 1901 and 1908-12:—

VICTORIA.—COUNTRY WATERWORKS UNDER TRUSTS AND MUNICIPAL CORPORATIONS, 1911 and 1908-12.

Year.	Waterworks Trusts.						Municipal Corporations.*			
	Number of Trusts.	Capital Cost.	Capital Indebtedness.	Interest Outstanding.	Receipts.	Expenditure.	Number of Corporations.	Capital Cost.	Capital Indebtedness.	Interest Outstanding.
	No.	£	£	£	£	£	No.	£	£	£
1901...	76	823,418	748,089	†	†	†	24	†	470,041	†
1908...	87	1,420,836	950,203	20,512	72,952	69,291	23	675,966	465,775	9,750
1909...	83	952,488	731,276	16,130	85,054	83,190	23	676,353	461,881	9,834
1910...	86	960,719	769,442	14,727	†	†	25	686,356	457,981	10,718
1911...	87	1,017,396	819,698	15,047	†	†	21	651,489	421,273	2,662
1912...	88	1,046,304	843,806	15,070	†	†	22	653,510	418,673	9,349

* Particulars as to the receipts and expenditure in respect of waterworks under the control of municipal corporations are not available. † Returns not available.

Under the provisions of the Local Government Act 1903, municipal councils are authorised to construct and maintain tanks, dams, and reservoirs, and must maintain existing works for the gratuitous supply of water. They are also empowered to accept the management and control of new waterworks within their respective localities, and may, with the consent of the Governor, construct or purchase new works within or without their locality. Councils are also authorised to enter into contracts for the supply of water for any period not exceeding ten years with the owners of any waterworks. Every municipality may levy a special water rate for water supplied, or for the purpose of constructing waterworks or paying the interest on any loan contracted by the council for such purpose, but the amount of the rate must not exceed in any year the sum of two shillings in the pound, provided that a minimum sum of ten shillings may be fixed by the council to be paid in respect of any property at which water is supplied.

(i.) *Geelong Waterworks Trust.*—(a) *Constitution.* Constituted under The Geelong Municipal Waterworks Act 1907, with borrowing powers up to £300,000, and further increased by Act No. 2322, 1911, to £350,000. Reconstituted under Geelong Waterworks and Sewerage Act, 1910, with power to borrow an additional £250,000 for the purpose of installing a sewerage system for Geelong and suburbs.

(b) *Water Supply.* The available storage capacity of the reservoirs is 1353 million gallons, and the Trust is authorised to supply water to (a) City of Geelong; (b) the suburbs thereof, and all places within a radius of five miles of the Geelong Post Office; and (c) any place within ten miles on either side of the main pipe from Stony Creek to Geelong.

(c) *Sewerage.* The sewerage scheme provides for a main outfall sewer 4 ft. 3 in. x 3 ft. 3 in. to the ocean at Black Rock—a distance of about nine miles. The scheme will embrace an area of 8081 acres, including the City of Geelong, Boroughs of Newtown and Chilwell, and Geelong West, and the suburban areas situated in Corio and South Barwon Shires.

10. *Fire Brigades.*—Under the Fire Brigades Act of 1890 a metropolitan fire district and nine country fire districts were established, the former being placed under the control of a Metropolitan Fire Brigades Board, and the latter under the control of a Country Fire Brigades Board.

(i.) *Metropolitan Fire Brigades Board.* The metropolitan fire district originally comprised the area included in the several municipalities within a radius of ten miles from the Melbourne General Post Office, but this area has since been extended in certain directions so as to include the greater part of the Shire of Moorabbin and also the township of Mordialloc. The Board is composed of nine members, of whom three are appointed by the Governor-in-Council, three by the municipal councils, and three by the insurance companies. On the 31st December, 1912, the Board had under its control 50 stations, 230 permanent men, 152 auxiliary firemen, 27 special service firemen, 10 steam fire engines, 5 gasoline engines, 2 chemical engines (1 motor), 2 petrol motor fire engines, 105,391 feet of hose, and 220 fire-alarm circuits having 776 street fire-alarms, of which 694 contained telephones. The total length of wire in use outside stations for fire alarms and telephones is about 483 miles.

(ii.) *The Country Fire Brigades Board.* This Board consists of nine members, of whom three are appointed by the Governor-in-Council, two are elected by the municipal councils of the districts where there are brigades registered under the Board, two by the fire insurance companies, and two by the registered fire brigades. At the end of the year 1912 there were 102 municipal councils and fifty-nine insurance companies included in the operations of the Act. All the brigades are volunteer brigades, but in the large towns permanent station-keepers and watchmen are employed. There were 118 registered brigades and 2308 registered firemen at the end of the year 1912.

(iii.) *Financial Operations of both Boards.* The Government, the insurance companies and the municipalities in which the Boards operate contribute equally to the cost and maintenance of the brigades. The following table gives particulars as to the financial operations of the Melbourne Board during each year from 1908 to 1912 inclusive:—

VICTORIA.—REVENUE AND EXPENDITURE OF METROPOLITAN FIRE BRIGADES BOARD, 1908 to 1912.

Particulars.	1908.	1909.	1910.	1911.	1912.
ORDINARY RECEIPTS.					
	£	£	£	£	£
Contributions	50,675	51,498	56,497	56,993	63,775
Receipts for services	2,545	3,212	3,990	3,719	6,011
Interest and sundries	5,136	3,821	2,451	3,420	6,965
Total ...	58,356	58,531	62,938	64,132	76,751
ORDINARY EXPENDITURE.					
	£	£	£	£	£
Salaries	27,358	31,759	33,742	37,913	45,613
Interest and sinking fund	8,467	8,425	11,009	9,588	9,681
Other expenditure	22,531	18,347	18,187	16,631	21,457
Total ...	58,356	58,531	62,938	64,132	76,751

For the year 1912 the receipts of the Country Fire Brigades Board amounted to £14,515, and the expenditure to £14,864.

11. The Melbourne Harbour Trust.—This Trust was constituted under an Act passed in 1876, as a result of public agitation and demands extending over a period of thirty-four years, to the effect that the cost of landing goods should be reduced, and the delays in receiving goods, should be abolished. Both demands arose from the fact that vessels of a draught greater than twelve feet had to discharge in the bay into lighters.

(i.) *Constitution of the Trust.* The Harbour Trust Act was originally drafted on the lines of similar institutions in Great Britain, such as the Thames Conservancy, the Mersey Harbour Board and the Clyde Trust. Under the Act of 1876, as amended in 1883, the number of Commissioners is fixed at seventeen, nominated or elected as follows:—Five were nominated by the Governor-in-Council, three elected by merchants, three by ship-owners, two were elected by the City Council, and one each by the ratepayers of South Melbourne, Port Melbourne, Williamstown, and Footscray. The sum of £1700 per annum was set aside for the remuneration of the Commissioners.

(ii.) *Works Undertaken by Trust in the River and in the Port.* In 1890 a Consolidating Act was passed, and the borrowing powers of the Trust were increased to £2,000,000. The river was widened from Queen's Bridge to the bay to about 300 feet, while the depth has been gradually increased until at the present time it is twenty-six feet at low water. Five and three-quarter miles of wharves carrying sheds which measure a total length of 13,235 feet, and cover an area of 675,420 square feet, have been constructed along the river and at the Victoria Dock, Melbourne.

(a) *The Coode Canal.* In 1886 the canal across the flats below Fishermen's Bend was completed at a cost of £96,000. The length of the canal is 2002 yards, the distance from Queen's Bridge to the river entrance being thereby reduced from seven miles to five and three-quarter miles, and the navigation being greatly facilitated. At the present time this channel, which is called the Coode Canal, is being widened 164 feet, which will make its total width 487 feet, and its width at low water 430 feet. The work of widening the canal is still in progress.

(b) *The Victoria Dock.* This dock, four miles up the river and opened in 1892, has an area of ninety-six acres and a depth of twenty-six feet at low water. The entrance to the dock is 160 feet wide. There are 8800 feet of wharfage, and the total cost, including wharves, sheds, and approaches thereto, was £416,088. The sheds have a total length of 4660 feet, and cover an area of 255,380 square feet.

(iii.) *Works in the Bay.* Prior to 1889 all the mail steamers and vessels of heavy draught had to lie at anchor in the bay, and there discharge into lighters. One of the first works undertaken by the Commissioners was to make the railway piers at Williamstown available to these vessels. This work was completed at a cost of £256,160. In 1893 a channel over 8000 feet long and 600 feet wide was constructed, running in a southerly direction from Port Melbourne Railway Pier and having a navigable depth of thirty feet o.l.w. The cost of this work was £218,379.

(iv.) *Dredging.* The total quantity of material raised by the dredging and excavation done in the improvement of the river and bay amounts to about 43 million cubic yards.

During the ten years ending 31st December, 1912, the average cost of dredging per cubic yard was 2.85 pence and the cost of towing and depositing 4.92 pence, not allowing for depreciation of plant. The Trust has expended £225,458 in reclaiming land within its jurisdiction. The amount of material raised annually is now about 1,200,000 cubic yards.

(v.) *Financial Operations.* The revenue of the Trust is obtained from wharfages, and quayage rates, rents and license fees from lands and ferries, and other license fees. One-fifth of the revenue of the Trust is paid to the consolidated revenue of Victoria. The following table gives particulars of the revenue and expenditure of the Trust from 1907 to 1912 inclusive:—

MELBOURNE HARBOUR TRUST.—REVENUE AND EXPENDITURE, 1907 to 1912.

Particulars.	1907.	1908.	1909.	1910.	1911.	1912.
REVENUE.						
Rates and rents	£ 257,787	£ 272,409	£ 259,641	£ 316,787	£ 332,732	£ 337,626
Interest	2,949	3,662	90	410	2,039	2,375
Recoups	5,542	1,068	3,082	2,138	4,654	7,297
Total	266,278	277,139	262,813	319,335	339,425	347,298

MELBOURNE HARBOUR TRUST.—REVENUE AND EXPENDITURE—
(continued.)

Particulars.	1907.	1908.	1909.	1910.	1911	1912.
EXPENDITURE.						
Wharfage refunds ...	£ 783	£ 1,161	£ 997	£ 1,618	£ 1,097	£ 1,457
Consolidated revenue of Victoria	51,565	53,869	51,612	62,604	65,413	68,344
Maintenance and management	53,741	70,224	54,962	56,794	58,987	86,486
Interest on loans ...	86,375	81,413	72,517	69,409	69,366	69,264
Dredging (construction) ...	8,163	9,162	16,368	25,200	31,932	26,244
Wharf ..	12,345	4,942	5,146	6,308	22,656	108,346
Other Harbour improvements ...	4,999	4,522	7,724	9,880	787	3,777
Plant account ...	11,310	13,753	11,887	860	21,935	72,078
Redemption of loans expenses ...	...	603	1,794	...	...	...
Total ...	229,281	239,649	223,007	232,673	272,173	435,996
PROFIT.						
Profit ...	36,997	37,490	39,806	86,662	67,252	88,698

§ 4. Queensland.

1. **Development of Local Government Systems.**—The existing scheme of local government in the State of Queensland is regulated by the provisions of the Local Authorities Act 1902, with its amendments in 1903, 1905 and 1910. A summary of these Acts and of the earlier legislation under which the system of local government in Queensland was inaugurated and developed, will be found in previous issues of this book (see Year Book No. 5, p. 1013).

2. **Systems of Local Government now in Operation.**—The principal features of previous enactments as to the division of the State into local areas are retained in the Acts of 1902 and 1910, but such areas are in future to be of two classes—(a) towns and (b) shires. All municipalities formerly constituted as boroughs become towns, except Brisbane, Rockhampton, and Townsville, which are declared to be cities, and all shires and divisions become shires. The Governor-in-Council may, after giving notice in the *Gazette*, constitute, unite, divide, or abolish areas for the purpose of forming new areas, and may by proclamation constitute a town or city.

(i.) *The Municipal Council.* All local areas are governed by councils, the members of which are called aldermen in the case of towns and councillors in the case of shires. *Town councils* are composed of either seven, nine, or eleven members, as declared by Order-in-Council, but if the town has wards three members are assigned to each ward. *Shire councils* are composed of five, seven, or nine members, as declared by Order-in-Council, but if the shire is divided the number cannot be more than three for each division, and need not be the same for every division.

In previous Year Books allusion has been made at some length to the powers and duties of municipal councils, as well as to loans, valuation, rates and tramway areas. It is not proposed to repeat this information in the present issue.

(ii.) *Qualification of Voters.* Generally every person of either sex of the age of twenty-one, who is a natural-born or naturalised subject, and is rated as an occupier or owner of ratable land, is entitled to vote. The number of votes depends upon the value of the land in the following scale:—

QUEENSLAND MUNICIPALITIES.—PLURALITY OF VOTES.

Value of land	...	Less than £500.	From £500 to £1000.	£1000 and upwards.
Number of votes	...	1	2	3

In the case of joint owners or occupiers, each is to be considered the owner or occupier of land of a value equal to that of the whole divided by the number of owners or occupiers not exceeding three. If more than three persons are joint owners or occupiers, those whose names stand first on the rate book or valuation or return are to be taken. Companies may nominate their secretaries, managers, or directors for the purpose of voting.

3. Area, Population, Number of Dwellings, Rates, Assets and Liabilities of Cities, Towns, and Shires.—The following table gives particulars of the area, population, number of inhabited tenements, assets and liabilities of cities and towns and of shires, for each year from 1907 to 1911:—

QUEENSLAND.—PARTICULARS OF CITIES AND TOWNS AND SHIRES, 1907 to 1911.

Year.	Municipality.	Area. Square Miles.	Population. No.	Number of Inhabited Dwellings. No.	Capital Value. £	Assets. £	Liabilities.		
							Government Loans. £	Other. £	Total. £
1907	Cities and Towns	354	231,861	43,864	13,840,010	1,296,743	325,685	637,196	962,881
	Shires ...	669,901	318,336	66,984	29,977,860	259,519	100,951	44,525	145,476
	Total	670,255	550,197	110,848	43,817,870	1,556,262	426,636	681,721	1,108,357
1908	Cities and Towns	354	236,388	45,430	13,745,293	1,372,525	279,194	745,300	1,024,494
	Shires ...	669,901	333,619	70,294	31,279,792	277,066	111,754	52,908	164,662
	Total	670,255	570,007	115,724	45,025,085	1,649,611	390,948	798,208	1,189,156
1909	Cities and Towns	364½	241,795	45,365	13,637,273	1,366,435	253,391	815,540	1,068,931
	Shires ...	669,870½	344,752	73,480	33,677,538	301,976	111,740	53,643	165,383
	Total	670,255	586,547	118,845	47,314,811	1,668,411	365,131	869,183	1,234,314
1910	Cities and Towns	364½	247,435	44,804	13,774,440	1,406,521	242,924	767,481	1,010,405
	Shires ...	669,890	358,085	76,803	36,023,390	331,382	116,456	50,882	167,338
	Total	670,254½	605,520	121,607	49,797,830	1,737,903	359,380	818,363	1,177,743
1911	Cities and Towns	364½	232,083	46,310	14,305,268	1,425,403	214,903	794,733	1,009,637
	Shires ...	669,890½	368,202	77,731	38,482,811	267,078	127,079	58,741	185,819
	Total	670,255	600,375	124,041	52,788,079	1,792,481	341,982	853,474	1,195,459

4. **Receipts and Expenditure of Cities, Towns, and Shires.**—The following table shews the receipts and expenditure (including loan moneys) of cities and towns and of shires, as well as the total receipts and expenditure of all municipalities, for each year from 1907 to 1911:—

QUEENSLAND.—REVENUE AND EXPENDITURE OF CITIES, TOWNS, AND SHIRES, 1907 to 1911.

Year.	Municipality.	Receipts.				Expenditure.					
		From Govern- ment.	From Rates.	From other Sources.	Total.	On Public Works.	Loan Redemp- tion.	Office Expenses and Salaries.	Other Ex- penses.*	Total.*	
		£	£	£	£	£	£	£	£	£	
1907	Cities and Towns	10,824	226,948	52,037	289,809	173,887	13,651	24,303	73,198	285,039	
	Shires ...	5,813	187,397	26,249	219,459	141,252	12,594	34,311	31,500	219,657	
	Total ...	16,637	414,345	78,286	509,268	315,139	26,245	58,614	104,698	504,696	
1908	Cities and Towns	11,352	233,622	57,550	302,524	196,754	17,596	25,014	71,788	311,152	
	Shires ...	23,646	202,722	30,146	256,514	187,346	12,281	33,810	37,251	270,688	
	Total ...	34,998	436,344	87,696	559,038	384,100	29,877	58,824	109,039	581,840	
1909	Cities and Towns	6,891	247,433	66,138	320,462	146,721	17,459	24,668	142,249	331,097	
	Shires ...	16,648	232,536	32,235	271,419	152,700	13,332	37,585	51,194	254,811	
	Total ...	23,539	469,969	98,373	591,881	299,421	30,791	62,253	193,443	585,908	
1910	Cities and Towns	16,775	278,300	68,296	363,371	222,203	18,581	25,891	92,188	358,863	
	Shires ...	23,285	253,398	37,295	313,978	209,466	12,147	39,092	44,405	305,110	
	Total ...	40,060	531,698	105,591	677,349	431,669	30,728	64,983	136,593	663,973	
1911	Cities and Towns	27,051	311,022	91,767	429,840	285,096	20,922	31,824	92,808	430,650	
	Shires ...	31,138	296,222	64,532	391,892	273,472	11,721	42,561	50,195	377,949	
	Total ...	58,189	607,244	156,299	821,732	558,568	32,643	74,385	143,003	808,599	

* Including interest on loans.

5. **The Metropolitan Water and Sewerage Board.**—This Board was constituted by the Metropolitan Water and Sewerage Act 1909, which divested the then existing Water Board of its powers and duties and vested them in an extended form in the new Board. The Act further empowers the Board to carry out a sewerage and drainage system, and relieves the Local Authorities of their responsibilities in that matter. The district of the new Board comprises the cities of Brisbane and South Brisbane, the towns of Hamilton, Ithaca, Toowong, and Windsor, and the shires of Balmoral (except division 3), Coorparoo, Enoggera (except division 3), Sherwood (except division 1), Stephens, Taringa, and Toombul.

The Board consists of nine members, viz., the president and eight elected colleagues.

(i.) **Brisbane Water Supply.** The supply is derived from the upper reaches of the Brisbane River, and from two storage reservoirs, known respectively as the Enoggera and the Gold-Creek reservoirs.

(a) **The Brisbane River Supply.** Of these the principal source of supply is the Brisbane River, about 60 per cent. of the water used being taken from it. The catchment area above the pumping station is about 4000 square miles. The Mount Crosby service reservoir, into which the water is pumped from the river, is built in cement concrete, and is 267 feet long, 100 feet wide, and 15 feet deep from high-water line, which is 455 feet above high-water mark at Brisbane. The capacity is about 2,500,000 gallons.

(b) *The Enoggera Reservoir.* The Enoggera works are distant from Brisbane about eight miles by road. The catchment area is nearly thirteen square miles in extent, and the reservoir, which is formed by an earthen dam, holds 1,000,000,000 gallons, of which 600,000,000 are available by gravitation. The greatest length of the reservoir is 2600 yards, and its greatest breadth 700 yards.

(c) *The Gold Creek Reservoir.* This reservoir is situated in the upper waters of Gold Creek, a branch of Moggil Creek, distant from Brisbane by road about thirteen miles. The supply is drawn from a catchment area adjoining that of Enoggera, and comprising an area of nearly four square miles. The total capacity is about 406,000,000 gallons, of which 400,000,000 gallons are available.

(d) *Service Reservoirs.* Certain portions of the metropolitan area are supplied with water from service reservoirs, which are connected with one or other of the main reservoirs alluded to above. These service reservoirs are constructed at Highgate Hill, Wickham Terrace, and Bartley's Hill, and have a total capacity of over 4,000,000 gallons. A fuller description of the Brisbane water supply scheme may be found in previous issues.

(ii.) *Brisbane Waterworks : Cost, Revenue, Expenditure, and Interest.* The sub-joined table gives particulars as to the cost, the revenue and expenditure, and the amount of interest and loan redemption during 1901 and each of the years 1908 to 1912 :—

BRISBANE WATERWORKS.—COST, REVENUE, EXPENDITURE, INTEREST, AND REDEMPTION OF LOANS, 1901 and 1908-12.

Year.	Capital Cost.	Revenue from Rates and Sales of Water.	Working Expenses.	New Work Construction.	Interest and Redemption of Loans.
	£	£	£	£	£
1901 ...	694,973	60,120	17,462	7,535	42,426
1908 ...	811,055	69,493	22,125	18,791	26,716
1909 ...	825,812	69,786	25,246	14,756	26,716
1910 ...	867,837	72,006	26,097	42,025	27,754
1911 ...	1,015,276	67,730	30,105	147,438	20,670
1912 ...	1,134,815	64,367	39,124	119,539	26,780

(iii.) *Brisbane Waterworks : Length of Mains, Tenements and Population Served, and Water Consumption.* The following table shews the length of mains, the number of tenements connected, the population supplied, the total quantity of water supplied, the average daily supply, and the average daily supply per head of population supplied during 1901 and each year from 1908 to 1912 :—

BRISBANE WATERWORKS.—PARTICULARS, 1901 and 1908-12.

Year.	Length of Reticulation Mains.	Number of Tenements Connected.	Estimated Population Supplied.	Quantity Supplied.	Average Daily Supply.	Average Daily Supply per Head of Estimated Population
	Miles.	No.	No.	,000 Gallons.	Gallons.	Gallons.
1901 ...	198	15,652	78,260	1,536,260	4,208,931	55
1908 ...	296½	20,365	101,825	1,620,057	4,438,514	43½
1909 ...	308½	21,560	107,800	1,673,287	4,584,351	42½
1910 ...	317	22,830	114,150	1,776,734	4,867,766	42½
1911 ...	333½	24,153	120,765	1,870,767	5,125,390	42.44
1912 ...	347	28,580	129,575	2,020,404	5,520,231	42.60

The total length of the trunk mains is 58½ miles.

A scheme of sewerage has been devised for Brisbane and its suburbs. It is intended to construct works for the provision of a population of 275,000, and tenders have been invited for the construction of the first three sections of the main sewer.

6. **Country Towns Water Supply.**—In addition to the city of Brisbane there were at the end of the year 1911 twenty-five towns in Queensland provided with water supply systems, constructed by municipalities chiefly from Government loans. The sub-joined statement gives particulars of all the water supply systems—exclusive of Brisbane—for the year 1911 :—

QUEENSLAND.—PARTICULARS OF COUNTRY WATER SUPPLY SYSTEMS, 1911.

		£			£
Receipts	Cost of construction to 31/12/11 ...	728,215	Expenditure	Office and salaries ...	10,850
	Rates and sales of water	70,458		Construction ...	47,113
	Other ...	46,059*		Maintenance ...	30,460
	Total Receipts ...	116,517		Interest & redemption	27,383
					Total ... 115,806
Assets ...	...	605,045	Liabilities ...	...	440,729

* Including £42,534 from Government loans.

7. **Fire Brigades.**—In the year 1911 there were twenty-six fire brigades organised in various towns in Queensland. The revenue of these brigades is derived chiefly from grants from the Government, from municipalities, and from the insurance companies, generally in equal proportions, and the following table gives these particulars for the year 1911 :—

QUEENSLAND.—FIRE BRIGADES, 1911.

Receipts.	Amount.	Expenditure.	Amount.
	£		£
From Government ...	4,722	Salaries and wages ...	8,248
„ Local authorities ...	4,805	Building, repairs, etc. ...	870
„ Insurance companies ...	4,711	Plant, stores, clothing, etc. ...	2,008
„ Other sources ...	787	Other ...	2,799
Total ...	15,025	Total ...	13,925

At the end of the year 1911 the fire brigades staffs comprised 54 permanent men, 294 partly paid, and 72 volunteers. The metropolitan brigade at Brisbane and the South Brisbane brigade protect an area of $9\frac{1}{2}$ square miles; their joint staffs comprise 55 men. They have three steam engines, one motor turbine, one chemical motor, eight hose reels, and 17,210 feet of hose. There are 38 telephone fire alarms and 35 call points.

§ 5. South Australia.

1. **Development of Local Government Systems.**—In the latter part of 1839 the first municipal law was passed in South Australia, which was thus the birthplace of municipal government in the Commonwealth. On the 31st October, 1840, the principles of self-government were practically adopted in Adelaide by the election of a mayor and council, consisting of nineteen members, and the system has since been extended throughout the settled parts of the State by the formation of district councils and municipal corporations, which are the two types of local authorities now in existence.

2. **District Councils.**—The first District Councils Act was passed in 1858, was amended in 1862, and was further amended and consolidated by the District Councils Act of 1876, which provided for the continuation of existing districts and for the establishment of new ones by proclamation on the petition of the ratepayers. The revenue of the councils consisted of rents, profits, and income from lands vested in the council or over which the council had the control and management; fines and penalties enforced under the Act; fees for licenses; and general and special rates and loans. Provision was made for the election of councillors, their number, qualification, and retirement; for the election of auditors; the meetings, powers and functions of councils; the appointment of constables; revenue and expenditure; assessment and rates; and for making by-laws for various purposes. The Act of 1876 was amended from time to time, and was finally amended and consolidated by the Act which is now in force, namely, the District Councils Act 1887, which has in turn been amended in the years 1889, 1890, 1897, 1904, and 1905. These Acts were again amended by the Local Government Act 1910.

(i.) *The District Councils Act 1887* provides for the continuation and amalgamation of existing districts and for the constitution as a new district of any part of the State containing rateable property capable of yielding upon a rate not exceeding one shilling in the pound the sum of £200. The Governor is authorised to alter the area or boundaries of any district by annexation or by subdivision. New districts are constituted upon petition to the Governor; every petition must be signed by fifty inhabitants of the part sought to be constituted; and if the proposed district comprises portion of a previously existing district, by a majority of the ratepayers of such portion.

(a) *Qualification of Councillors.* Every male ratepayer, if of full age, is qualified to be a councillor, unless he is a minister of religion, a stipendiary magistrate, an uncertificated insolvent, or is the treasurer or paid official of the district council, or is interested in any contract, except for advertisements and printing, with the district council. The chairman is elected by the councillors from their own number.

(b) *Qualification of Electors.* Every person of either sex, if of the age of twenty-one years, whose name appears as a ratepayer in the assessment book is entitled to a vote at the elections of councillors and auditors. In case of a joint tenancy or a tenancy in common, only one person is entitled to a vote for every £75 or part thereof at which the property is assessed.

The powers and duties of district councils have been given *in extenso* in previous issues.

3. **Municipalities** were first established under the Municipal Corporations Act of 1861, which, after providing for the extension of the powers and duties of the Corporation of the City of Adelaide, authorised the Governor, on petition of a majority of not less than two-thirds of the property-owners, to constitute any town, district, or place within the province, into a municipality. This Act and its amendments were consolidated in the Municipal Corporations Act of 1880, which was amended from time to time until the year 1890, when it was repealed and its provisions consolidated by the existing Act, the Municipal Corporations Act of 1890, which was in turn amended in 1893, 1896, and 1903. These Acts were again amended by the Local Government Act 1910.

(i.) *The Municipal Corporations Act 1890.* After making provision for continuing existing corporations and by-laws, the Act authorises the Governor to constitute new municipalities, or to alter the boundaries of existing ones, on petition of not less than

two-fifths of the ratepayers or owners of ratable property within the land proposed to be incorporated, separated, or added; and also to rearrange, increase or diminish the number of wards of a municipality on petition of not less than one-fifth of the ratepayers therein. Each council consists of a mayor, and of two councillors for each ward, and the provisions as to their qualifications are substantially the same as in the case of district councils referred to above. All persons of full age, if British subjects and not in receipt of public relief or alms, who are either owners or occupiers of any ratable property within a municipality are entitled to vote at the election of the mayor and councillors. Provision is made for the nomination and election of the mayor, councillors, and auditors, and for regulating the meetings of the councils. The functions of municipal councils will be found described in previous issues of this book.

4. Finances of District Councils and Corporations.—The subjoined tables shew the amounts of assessments and the revenue and expenditure of district councils and of corporations for the financial years 1901 and 1907 to 1911; the figures given are exclusive of the Main Roads Funds, particulars as to which may be found in the section of this book on "Roads and Bridges."

SOUTH AUSTRALIA.—ASSESSMENT, REVENUE, AND EXPENDITURE OF LOCAL AUTHORITIES, 1901 and 1907-11 (EXCLUSIVE OF MAIN ROADS FUNDS).

Year.*	Amount of Assessment (Annual Value).	Revenue.				Expenditure.	
		From Rates.	From Subsidies.	Other Sources.	Total.	On Public Works.	Total.

DISTRICT COUNCILS.							
	£	£	£	£	£	£	£
1901	1,412,507	68,321	15,225	51,919	130,465	65,406	128,499
1907	1,647,895	81,295	18,296	28,395	127,986	81,208	121,030
1908	1,801,370	84,036	23,054	27,079	134,169	89,665	128,072
1909	1,849,286	89,051	20,718	30,783	140,552	104,834	146,468
1910	2,098,282	96,550	25,483	30,058	152,091	101,979	146,593
1911	2,146,530	106,963	28,017	29,195	164,175	120,369	161,125

CORPORATIONS.							
	£	£	£	£	£	£	£
1901	1,177,850	87,289	9,733	49,342	146,364	55,533	146,091
1907	1,254,956	100,863	14,276	39,779	154,918	88,525	161,754
1908	1,286,696	103,109	15,479	50,470	169,058	86,889	167,797
1909	1,340,755	108,480	15,828	57,837	182,145	97,118	177,897
1910	1,385,752	112,896	16,589	57,494	186,979	104,586	198,875
1911	1,499,012	133,550	16,420	62,536	212,506	105,738	217,313

* Up to and including the year 1903, the financial year for Corporations ended on the 31st December, but after that date ends on the 30th November. The financial year for district councils ends on the 30th June.

5. Adelaide Water Supply System.—The water supply system of Adelaide is under the control of the Public Works Department. The supply is obtained partly from the catchment areas of the rivers Onkaparinga, Torrens, and Sixth Creek, and partly from springs and pumping stations. There are three storage reservoirs, situated at Happy Valley, Hope Valley, and Thorndon Park, having an aggregate capacity of 3,895,000,000 gallons, while the tanks used in connection with the springs and pumping stations have a further capacity of 4,824,000 gallons. The total capital cost up to the 30th June, 1912, was £1,843,607, the total revenue being £2,607,160 and the area served approximately 85,000 acres.

The following table gives various particulars relating to the water supply of Adelaide for the years 1907 to 1912 inclusive:—

ADELAIDE WATER SUPPLY.—LENGTH OF MAINS, REVENUE, EXPENDITURE, AND CONSUMPTION OF WATER, 1907 to 1912.

Year Ended 30th June.	Length of Mains.	Gross Revenue.	Working Expenses.	Net Revenue.	Percentage of Net Revenue on Capital Cost.	Total Consumption of Water. ¹
	Miles.	£	£	£	%	Million of Gals.
1907 ...	667½	74,727	19,703	55,024	3.24	3,350
1908 ...	673	76,707	21,233	55,474	3.26	4,000
1909 ...	684	81,412	20,762	60,650	3.53	4,000
1910 ...	704	82,290	22,709	59,581	3.31	4,000
1911 ...	732	89,902	28,032	61,870	3.40	4,000
1912 ...	763½	94,280	26,384	67,896	3.68	4,600

1. In the Adelaide Water District there are no governing meters. The quantities shewn above are as recorded by gaugings taken at the reservoirs, and include evaporation and absorption.

6. Adelaide Sewerage System.—In connection with the sewerage system of Adelaide, which is also under the control of the Public Works Department, about 309 miles of sewers had been laid in the city and suburbs up to the 30th June, 1912. The sewage is disposed of on a farm and filter-beds, the latter being used only during the winter months. A scheme of sewerage extension is now nearing completion, which includes a pumping station, to deliver the sewage to the existing sewage farm.

The following table gives particulars relating to the Adelaide sewerage system for the years 1907 to 1912 inclusive:—

ADELAIDE SEWERAGE SYSTEM.—REVENUE AND EXPENDITURE, 1907 to 1912.

Year Ended the 30th June.	Revenue			Expenditure			Net Revenue.	
	Rates and Interest.	Sewage Farm. Sales of Produce, etc.	Total.	Maintenance.	Sewage Farm Working Expenses.	Total.	Total.	Percentage on Capital Cost.
	£	£	£	£	£	£	£	%
1907 ...	32,380	6,390	38,770	6,284	5,460	11,744	27,026	4.00
1908 ...	32,678	7,436	40,114	6,294	5,081	11,375	28,739	4.49
1909 ...	34,701	8,284	42,985	7,161	5,917	13,078	29,907	4.56
1910 ...	36,322	7,213	43,535	7,184	6,088	13,272	30,263	4.41
1911 ...	37,938	7,189	45,127	8,462	7,681	16,143	28,984	4.26
1912 ...	41,449	6,934	48,383	9,376	5,039	14,415	33,968	4.88

The seaside town of Glenelg is served by a separate sewerage disposal works, including a pumping station, septic tank, lucerne plots, and filter beds. The net revenue for the year ended 30th June, 1912, was £1383, being 3.49 per cent. on the capital cost. Up to the same date 12½ miles of sewers had been laid.

7. Water Supply in Country Towns.—In South Australia there is a number of country waterworks under the control of the Public Works Department. There are three large reservoirs at Barossa, Beetaloo, and Bundaleer, which supply fifty-three townships with water for domestic and stock purposes. The principal towns

thus supplied are Gawler, Wallaroo, Moonta, Kadina, Port Pirie, Port Wakefield, and Balaklava. These three reservoirs have a capacity of over 3,000,000,000 gallons, and serve an area of nearly 4000 square miles. In the section of this book dealing with "Irrigation" reference has been made to these reservoirs. (See page 581.) Fifteen township districts are supplied from smaller local reservoirs, the most important town served being Port Augusta.

New water supply schemes are in course of construction for the supply of townships and farming lands on Eyre Peninsula, near Cowell, Arno Bay, and Cleve.

8. Fire Brigades Board.—The Fire Brigades of South Australia are managed by a Board consisting of six members, two being nominated by the Government, one by the Adelaide city council, one by the other metropolitan and country municipalities, and the other two by the contributing insurance companies. The revenue of the Board is derived by contributions of three-ninths by the Government, four-ninths by the insurance companies, and two-ninths by the city of Adelaide and the other municipalities subject to the Act, the contributions for 1912 amounting to £21,311. Brigades are established in the following municipalities, viz., Adelaide, Kensington and Norwood, including St. Peter's, Unley, Port Adelaide, Glenelg, Gawler, Kapunda, Moonta, Kadina, Port Pirie and Port Augusta. The strength of the brigades consists of 87 permanent firemen and 26 auxiliary firemen. The number of calls received during the year 1912 was 366, of which 16 were to fires of a serious nature.

§ 6. Western Australia.

1. Types of Local Authorities.—In this State there are three forms of local authorities, namely :—(i.) Municipalities, (ii.) Road Districts, and (iii.) Local Boards of Health. The first Municipalities Act was passed in 1871, but only a few districts were incorporated under it. In 1895 a more comprehensive measure, the Municipal Institutions Act, was passed, and after being amended from time to time was consolidated by the Municipal Institutions Acts 1902 and 1904. In 1906 the most recent enactment, the Municipal Corporations Act, was passed, repealing and consolidating previous enactments. The whole area of the State outside incorporated municipalities is divided into road districts, which are administered under the Roads Act 1902 and 1904. In municipalities the councils act as Health Boards for the purpose of administering the Public Health Act, while outside municipalities local Boards of Health may be formed. In 1904 another local government measure, the Water Boards Act, was passed, under which Boards may be appointed for the control of waterworks, and rates may be levied for the purpose, the maximum being fixed at two shillings in the pound of ratable value.

2. Municipalities are now regulated by the Municipal Corporations Act, which came into force on the 1st January, 1907. Provision is made for the continuation of existing municipalities, and the Governor is authorised to constitute new municipalities on petition signed by at least fifty property-holders of the district proposed to be incorporated; to unite adjoining municipalities on petition under their common seals; to sever any portion from a municipality on petition signed by a majority of the ratepayers, and to annex such portion to a contiguous municipality or road district.

(i.) *Municipal Councils* consist of a mayor and councillors, the number of which depends upon the population of the municipality; if the population is less than 1000 there are six councillors, if from 1000 to 5000 there are nine councillors, and if the population is over 5000 there are twelve councillors, or three for each ward. Any male ratepayer of the age of twenty-one years, if a natural born or naturalised subject, is eligible for election as mayor or councillor, except ministers of religion, uncertificated bankrupts, prisoners, and certain other persons who may be disqualified on the ground of interest.

The duties and powers of municipal councils, the levying of rates, the qualification of voters and the classification of municipalities in Western Australia are fully referred to in previous issues. (Year Book No. 5, p. 1025.) Consideration of space prevents their inclusion in this edition.

(ii.) *Government Subsidies.* Grants are made annually to municipalities by way of subsidies on the amounts of rates collected. To entitle any council to participate in the allocation of the annual Parliamentary vote the council must have levied a minimum general rate of one shilling in the pound, and must have collected not less than £300 from such rate. Newly-constituted municipalities are, during the first year of existence, dealt with apart from the provisions of the general scheme, and are allowed a subsidy of £2 for every £1 of general rate collected; in subsequent years they participate according to the general provisions. No subsidy is paid on income from general rates exceeding £3000.

3. Area, Population, etc., of Municipalities.—Returns regarding the area, population, and valuation of municipalities are defective. They are shewn in the table hereunder:—

**WESTERN AUSTRALIA.—NUMBER, AREA, POPULATION, NUMBER OF DWELLINGS,
AND VALUATION OF MUNICIPALITIES, 1901 and 1907-11.**

Year ended the 31st October.	Number of Munic- ipalities.	Area.	Population.	Dwellings.			Amount Payable in respect of Rates.
				Occupied.	Unoc- cupied.	Total.	
	No.	Acres.	No.	No.	No.	No.	£ s
1901	42	71,721	196,807 ²	220,989	2967	221,956	
1907	47	89,748	136,845	426,756	42,050	428,806	142,770
1908	47	90,078	135,525	29,208	2,112	31,320	144,344
1909	46	88,833	141,543	30,535	1,263	31,798	138,869
1910	42	75,716	143,808	31,064	51,652	532,716	139,835
1911	42	75,430	143,808	31,064	51,652	532,716	144,745

1. Census figures, 1901. 2. Returns for thirty-nine municipalities only. 3. Not available.
4. Exclusive of one municipality. 5. Census figures, 1911.

Complete particulars of improved or unimproved capital values are not available. In the year 1911 the capital value of ratable property in municipalities was £20,362,374.

4. Revenue and Expenditure of Municipalities.—The following table gives particulars as to the revenue and expenditure of municipalities during the years 1901 and 1907 to 1911:—

**WESTERN AUSTRALIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES,
1901 and 1907-11.**

Year ended the 31st October	Revenue.				Expenditure.			
	From Rates.	From Govt. Grants.	From other Sources.	Total.	Works and Improvements.	Disbursements in respect of Loans.	Other Expenses.	Total.
	£	£	£	£	£	£	£	£
1901*	78,021	66,860	82,228	227,109	111,241	23,809	79,365	214,415
1907 ...	136,868	85,473	151,865	374,206	132,103	57,516	228,763	418,382
1908 ...	139,228	67,315	176,040	382,583	103,943	59,037	239,882	402,862
1909 ...	138,445	37,301	207,982	383,728	83,283	61,137	225,645	370,065
1910 ...	138,719	13,337	230,407	382,463	87,998	67,168	244,650	399,816
1911 ...	144,993	27,944	252,743	425,680	75,697	69,896	283,402	428,995

* Incomplete.

5. Assets and Liabilities of Municipalities.—The following table gives particulars respecting the assets and liabilities of municipalities at the end of each financial year 1901 and 1907 to 1911:—

**WESTERN AUSTRALIA.—ASSETS AND LIABILITIES OF MUNICIPALITIES,
1901 and 1907-11.**

Year ended the 31st October	Assets.					Liabilities.		
	Balance in Hand.*	Value of Property owned by Municipalities.	Accrued Sinking Funds for Redemption of Loans.	Other Assets.	Total.	Outstanding Debts and Bonds.	Other Liabilities.	Total.
	£	£	£	£	£	£	£	£
1901† ...	37,259	214,984	42,311	13,432	307,986	321,000	19,762	340,762
1907 ...	39,414	553,873	125,742	55,430	774,459	730,994	47,131	778,125
1908 ...	27,291	605,165	143,434	58,988	834,878	757,494	42,321	799,815
1909 ...	41,216	628,205	152,416	56,705	878,542	795,108	36,352	831,460
1910 ...	24,603	669,499	174,119	58,548	926,769	844,844	53,904	898,148
1911 ...	19,570	703,044	195,892	48,884	967,390	893,064	55,615	948,679

* Including bank balance, cash in hand, and fixed deposit. † Incomplete.

6. Road Districts.—The whole area of the State, outside incorporated municipalities, is divided into districts, the executive powers being vested in elective boards. These districts were originally formed solely for the purpose of controlling roads and bridges, but their powers and duties have been extended, so that at the present time they correspond closely to the shires of the other States of the Commonwealth. The enactments at present governing the administration of the Road Boards are the Roads Act 1911, the Parks and Reserves Act, the Cattle Trespassing Act, the Width of Tyres Act, the Cart and Carriage Licenses Act, and the Dog Act. The general powers and duties of the Boards are described in previous issues of this book.

7. Boards of Health may be established under the Public Health Act 1911, which came into force on the 1st June, 1911, either within or outside of municipal boundaries. In the former case the Act is administered by the municipal councils, while in the latter case districts whose borders are conterminous with road districts are administered by the local authorities. Those not conterminous with road districts are administered by special

Boards. The revenue of these Boards consists chiefly of moneys received from health rates and sanitary fees, and the largest item of expenditure is directly connected with the sanitary service. The following table shews particulars of the receipts and expenditure of the various Boards—both municipal and extra-municipal—during the years 1901 and 1907 to 1911 :—

**WESTERN AUSTRALIA.—RECEIPTS AND EXPENDITURE OF LOCAL HEALTH
BOARDS, 1901 and 1907-11.**

Year ended the 31st October.	Revenue.			Expenditure.		
	From Public Health Rate.	From other Sources.	Total.	On Sanitary Services.	Other Expenses.	Total.
	£	£	£	£	£	£
1901	15,230	17,477	32,707	18,787	12,992	31,779
1907 ¹	433,289	35,285	68,574	39,419	31,697	71,116
1908	36,304	41,674	77,978	43,830	34,981	78,811
1909	39,447	50,688	90,135	49,502	38,465	87,967
1910 ²	788,741	52,095	90,836	56,278	34,144	90,442
1911 ³	38,398	56,807	95,205	59,639	32,919	92,558

1. Exclusive of particulars of twenty-one boards which did not furnish returns, and of five boards which were not active, all outside municipalities. Particulars for previous years are also incomplete. 2. Exclusive of 10 boards which did not furnish returns, and 14 boards which were non-active. 3. Exclusive of 1 board which furnished no returns and 22 boards which were inactive. 4. Including sanitary rates, £16,564. 5. Including sanitary rates, £17,707. 6. Including sanitary rates, £16,804. 7. Including sanitary rates, £17,986. 8. Including sanitary rates, £17,427. 9. Including sanitary fees and charges, £13,341. 10. Including sanitary fees and charges, £50,617. 11. Exclusive of expenditure of one extra-municipal board.

On the 31st October, 1911, there were forty-two Local Boards of Health within municipalities and seventy-six extra-municipal Boards.

8. Water Supply, Sewerage and Drainage Department.—Prior to 1912, water supply, sewerage and drainage, in Western Australia, although under Governmental control, was nevertheless under the management of several distinct departments. In that year however the Government decided that this divided control should be concentrated in one department with the Minister of Works as administrator, and on the 1st August, 1912, a new department with the above title assumed the management of the undermentioned water supplies :—

- (a) The Metropolitan Water Supply Sewerage and Drainage Department.
- (b) The Goldfields Water Supply Administration.
- (c) The branch of the Mines Department dealing with the Mines Water Supply, boring and well-sinking in mining districts, the North-west, etc.
- (d) The branch of the Public Works Department dealing with water supply, sewerage, drainage, well-sinking, boring, etc, in agricultural districts, the North-west, etc.

The Acts of Parliament to be administered by the new department are :—“The Metropolitan Water Supply Sewerage and Drainage Act 1909 ;” “The Goldfields Water Supply Act 1902” and amendment ; “The Water Boards Act, 1904 ;” “The Lands Drainage Act 1900” and amendment, and “The Water Supply Act 1893.”

9. **The Perth Metropolitan Water Supply, Sewerage, and Drainage.**—The Perth Metropolitan Water Supply Works were first opened by a private company in October, 1890. Under the provisions of the Metropolitan Waterworks Act 1896, however, the works were purchased by the Government at a cost of £220,000, and were placed under the control of a Board, the functions of which have been exercised since the year 1904 by the Minister for Works. By the Metropolitan Water Supply, Sewerage, and Drainage Act 1909, all water and sewerage works formerly vested in the Metropolitan Board were transferred to a Minister of Water Supply, Sewerage, and Drainage. In August 1912 the administration was transferred to the new Water Supply Department (see preceding paragraph).

(i.) *Water Supply.* The supply of water is derived from four sources—(i.) the Victoria reservoir. (ii.) Bickley Brook reservoir, (iii.) the Mundaring reservoir, and (iv.) from six artesian bores.

(a) *The Victoria Reservoir.* This is the main source of supply. The reservoir has a capacity of 220,000,000 gallons, and has a catchment area of 10,000 acres on the Darling Ranges. There are three service reservoirs, respectively of 2,413,000, 10,000,000 and 900,000 gallons capacity.

(b) *Bickley Brook Reservoir.* This is supplementary to the Victoria reservoir, being connected to it by an eight-inch pipe. It has a catchment of 1780 acres, and a yearly supply of 23 million gallons is drawn from this source.

(c) *The Mundaring Reservoir.* This reservoir is used as an emergency supply. It has a capacity of 4,650,000,000 gallons, but is only connected by an eight-inch main. During the year 1910-11, 10,457,000 gallons were drawn. This reservoir has a catchment area of 569 square miles, and was constructed in connection with the goldfields water supply.

(d) *Artesian Bores.* There are in all six artesian bores, the flow from which augments the main supply from the Victoria reservoir. The total flow is about 420,000,000 gallons during the season, which lasts approximately for six months.

(ii.) *Financial Operations of Water Supply Department.* The following table gives particulars of the financial operations of the Metropolitan Water Supply Branch for each year ending the 30th June from 1909 to 1912 inclusive:—

PERTH METROPOLITAN WATER SUPPLY BRANCH.—PARTICULARS OF FINANCIAL OPERATIONS, 1909 to 1912.

Year ended the 30th June.	Capital Cost of Works.	Depreciation.	Net Capital Cost.	Gross Revenue.	Cost of Maintenance and Management.	Interest Earned on Gross Capital Cost.	Ratio of Working Expenses to Revenue.
	£	£	£	£	£	Per cent.	Per cent.
1909 ...	524,022	34,468	489,554	45,711	14,162	6.02	30.98
1910* ...	628,757	44,415	584,342	60,249	20,862	6.26	34.62
1911* ...	645,023	92,351†	552,672	61,723	22,081	6.15	35.77
1912* ...	701,852	107,888	594,464	66,892	25,082	5.95	37.49

* Perth, Fremantle, and Claremont combined. † £39,724 transferred from reserve account to depreciation to provide for estimated overvaluation made at time of purchase of Perth Water Supply.

(iii.) *Consumption of Water.* The following table shews the total annual supply, the average daily supply, and the average daily supply per house and per head of population during each financial year from 1909 to 1912 inclusive:—

**PERTH METROPOLITAN WATER SUPPLY BRANCH.—CONSUMPTION OF
WATER, 1909 to 1912.**

Year ended the 30th June.	Total Annual Supply in ,000 Gallons.			Average Daily Supply in Gals.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply in Gals.	
	From Reservoir.	From Bores.	Total.				Per House.	Per Head of Population.

PERTH DISTRICT.

1909	...	349,467	281,585	631,052	1,731	14,012	54,000	123	32.0
1910	...	392,715	281,104	673,819	1,846	14,512	56,000	127	33.0
1911	...	414,512	355,810	770,322	2,110	15,075	59,000	131	35.7
1912	...	364,428	420,914	785,342	2,441	16,055	62,250	152	39.4

FREMANTLE DISTRICT.

1909	...	...	282,785	282,785	774,753	3,971	19,000	195	40.7
1910	...	...	278,179	278,179	762,193	4,042	19,500	188	39.0
1911	...	...	286,461	286,461	782,085	4,150	20,000	188	39.1
1912	...	...	313,405	313,405	856,300	4,280	20,500	200	41.7

CLAREMONT DISTRICT.

1909	...	...	105,584	105,584	289,271	1,670	7,000	173	41.3
1910	...	...	101,240	101,240	277,370	1,783	7,500	156	37.0
1911	...	...	110,275	110,275	302,123	2,042	8,000	148	37.7
1912	...	...	118,399	118,399	328,800	2,320	8,750	141	37.6

(iv.) *Sewerage and Drainage in Perth and Fremantle.* The work of providing a sewerage system for Perth and Fremantle was commenced in 1906, and has proceeded without interruption up to the present time. House connections in Perth are making rapid progress, there being upwards of 2700 premises connected to the sewers, while in Fremantle 400 houses have been already connected. A description of the method of sewage disposal adopted may be found in previous issues. (See Year Book No. 5, p. 1031.)

10. The Goldfields Water Supply Branch.—This scheme by which the Government of Western Australia undertook to provide a permanent supply of water for the population of the eastern goldfields of that State has already been described in the section dealing with "Water Conservation" (see page 575 *ante*). The main source of supply is the Helena River in the Darling Ranges, whence by a system of reservoirs, the water is conveyed to Kalgoorlie and the surrounding district. Up to the 30th June, 1912, the total cost of construction was £3,317,414. The total consumption for the financial year 1911-12 was 1,134,800,000 gallons, an increase on the previous year of 75,900,000 gallons. The gross revenue for the year was £243,521, and the working expenses £78,240, leaving a surplus available towards interest and sinking fund of £165,281. The outlay for interest and sinking fund charges in respect of supplementary capital borrowed on debentures absorbed £23,650, leaving £141,631 payable to the State Treasury. During the financial year the State Treasury paid £168,813 interest and sinking fund on State loans in respect of these works, leaving a net deficiency of £27,182.

11. Mines Water Supply Branch.—On the first of August, 1912, the administration of this branch was transferred to the new Water Supply, Sewerage and Drainage Department. While the statistics of this branch of the Department do not properly belong to the section dealing with "Local Government," nevertheless as the functions exercised by the Department are similar to those delegated to local authorities in most of the other States of the Commonwealth, it is considered advisable to include them in the section under review.

At the present time the water stations under the control of the engineer number about 1400, and are spread over an area of nearly 500,000 square miles, extending from the Phillips River in the south to the Kimberley district in the far north. The principal works carried out by the branch are as follow :—

- (i.) Domestic supplies for mining towns and the supply of water for battery and general mining purposes.
- (ii.) Opening up the very remote portions of the State by means of tracks, of which there are nearly 4000 miles.
- (iii.) The sinking of wells and bore-wells, also testing the country by means of boring to locate water, and thus enabling the mineral resources of the State to be systematically prospected.
- (iv.) Diamond drilling has also been carried out for the purpose of testing the country for minerals at depths unattainable with the ordinary boring plants.
- (v.) Nearly 2000 miles of stock routes have been opened up, and wells have been sunk at easy stages, capable of watering mobs of 400 head of cattle. In addition to these works the Wiluna-East Kimberley route (890 miles) has been constructed. Tanks, dams, and reservoirs have been made on the goldfields for the conservation of surface water, their total storage capacity being 193,000,000 gallons, and their cost over £400,000. Owing to the poor rainfall, the excessive evaporation, and the porosity of the soil, it has been found necessary to line and roof many of these tanks, and it has been proved that a reservoir so treated is equal in value to one 5 or 6 times as large but open to evaporation and unlined. By the reduction of the loss from all causes to a minimum, water is available at the end of a dry year, when water is badly needed, and when the open, unlined tank is empty. The capacities range from a 40,000 gallon roofed and lined tank for use of prospectors to a 38,000,000 gallon reservoir for a town supply.

Boring to locate water for domestic, stock, battery and other purposes has been carried out, the total depth being nearly 120,000 feet, and where good water has been found, a bore has been equipped with casing and pump, or a well sunk according to requirements.

The water shafts, of which there are about 300, are equipped according to the supply and demand, in some cases with only windlass and bucket, in others with a pump, storage tank, etc., while some which supply towns and batteries, are equipped with powerful pumps and engines.

Some of the town supplies, after being constructed by the Mines Water Supply Branch, have been handed over to a local board for administration, but further extensions and improvements are subject to the approval of the engineer.

A very important adjunct of the Branch is the camel farm established at Coolgardie, where the breeding of camels is undertaken, the number at present being about 240. These camels are used by parties from the Water Supply Branch in the arid regions of the interior, where water is scarce and the stages are long, and occasionally they are used by the other Government Departments engaged on such works as the Rabbit Proof Fence and Transcontinental Railway Survey.

12. Water Supplies in Agricultural Areas.—When, in 1910, the Government decided to open up the unexplored agricultural districts, it was recognised that, to ensure the success of the undertaking, water supplies and access thereto were necessary. At first it was decided to rely wholly on conservation by dams. The system of zonage was inaugurated, that is, dams were constructed at a distance of about 8 miles apart. At the end of 1911, however, it was decided to further exploit the country by boring for well water, in conjunction with further dam construction, and up to the close of 1912, 236 tanks have been constructed and 218 wells have been sunk.

The tests by boring vary considerably in different parts of the country. In the south and in the Broomhill and Dumbleyung areas the percentage of well strikes was very small, but as there was no difficulty in the matter of catchments for reservoirs and as the holding ground was perfect, the deficiency of well water was not of so great importance.

The further north of these areas that boring operations were extended, the better was the supply of water obtained, a large percentage of success being met with in the Dowerin District.

Boring is still being carried on in all the districts except Broomhill and Dumbleyung, while the dams are equipped with rabbit-proof fencing, pumps, etc.

13. Fremantle Harbour Trust.—Under the provisions of an Act passed in 1902 a Harbour Trust was constituted for the general administration of Fremantle harbour, and since January, 1903, the Trust has had full control of all the affairs of the harbour, and undertakes the duties of wharfingers, and the receiving, sorting, storing, delivering, and handling of all cargo, between vessels and the owners of the goods. The works, which were commenced in 1892, were designed with the object of forming a safe and commodious harbour within the mouth of the Swan River, so as to admit vessels at all states of the tide, and thus enable cargo to be loaded and discharged at the quays and goods-sheds on the river banks. Two ocean moles have been thrown out from the north and south heads, the former being 3450 feet and the latter 2040 feet long. A channel, 450 feet wide and 30 feet deep at low water, has been blasted and dredged through the rock which formerly crossed the estuary to the river, and wharves and goods-sheds have been constructed along the reclaimed foreshore on both sides of the harbour. The port possesses up-to-date electrically operated grain storage and shipping appliances and the quays are well equipped with electric cranes and elevators, all wharves and stores being in direct communication with the State railway system. At the present time all the European mail boats, which make Fremantle the first and last port of call in Australia, are able to enter and leave the harbour in all weather and at all tides. For the year ended the 30th June, 1912, the total revenue of the Trust was £170,338, and the expenditure £60,422, shewing a gross profit of £53,464. The gross amount paid to the Treasury for the year was £96,320, being interest £53,464, sinking fund £15,275, and surplus revenue account £27,581.

14. Fire Brigades Boards.—Under the Fire Brigades Act 1898, fire brigades were established in a number of the more important centres of population in the State. These brigades were under the control of local boards, and were in some cases municipal and in others volunteer.

An Act to make further provision for the protection of life and property from fire was passed in 1909 and came into operation on the 1st January, 1910. It is called the District Fire Brigades Act, and divides Western Australia into two fire districts under

the control of the Western Australian Fire Brigades Board. The Board is constituted as follows:—Two members nominated by the Government; one member nominated by the Perth City Council; one member elected by the Municipalities of Kalgoorlie, Boulder, Coolgardie, and the Kalgoorlie Road Board; one member elected by the Municipalities and Road Boards other than those above-mentioned; three members elected by the Insurance Companies; and one member elected by the Volunteer Fire Brigades. The election of the Board takes place bi-annually, and its income is provided as follows:—Two-eighths by the Government, three-eighths by the Municipalities and Road Boards, and three-eighths by the Insurance Companies. The receipts for the year 1912 amounted to £29,611, and the expenditure to £29,219. The value of buildings and plant belonging to the Board is £41,715.

The whole of the Brigades throughout the State are now controlled by this Board, and number three purely permanent, twelve permanent and partially paid, four partly permanent and partly volunteer, two purely partially paid, and twenty-five purely volunteer brigades; making a total of forty-six. The staff includes a chief officer, deputy-chief officer, third officer, ninety-one permanent firemen, sixty-three partially paid firemen, and 527 volunteer firemen.

§ 7. Tasmania.

1. **Development of Local Areas.**—In this State the city of Hobart was incorporated by special Act in the year 1852, but it was not until 1858, when the Rural Municipalities Act was passed, that a general scheme for the establishment of municipalities was extended throughout the State. This Act was amended from time to time without, however, altering its chief characteristics. In 1869 a Roads Act was passed, and after being amended at various times was consolidated in 1884. Under the provisions of these Acts parts of the State were placed under the control of Town Boards and Road Trusts. The general rate under the Municipalities Act was limited to one shilling and sixpence in the pound of annual value, while special rates could be levied in rural districts, provided that the general and special rates together did not exceed one shilling and sixpence in the pound.

2. **Acts now in Force.**—In 1906 the whole of the Acts dealing with local authorities were amended and consolidated by the Local Government Act of that year. The whole State, with the exception of the urban municipalities of Hobart and Launceston, is divided into municipal districts, and every Rural Municipality, Town Board, Main Road District, Road District, Local Health District, Fruit District, Rabbit District, School District, and Public Recreation Ground District included in any municipality established by the Act is abolished. Each district is incorporated and is under the control of a warden and councillors, who, in addition to the specific duties and powers imposed and conferred by the Act of 1906, are vested with powers and authorities under the following Acts:—The Codlin Moth Act 1888, the Rabbits Destruction Act 1889, the Public Health Act 1903, the Education Act 1885, the Roads Act 1884, the Rural Municipalities Act 1865, the Police Act 1905, the Town Boards Act 1896, the Public Recreation Grounds Act 1888, the Cemeteries Act 1865, and the Californian Thistle Act 1883. The Governor is authorised to unite, subdivide, or abolish municipalities or wards on petition, and may do so without petition if in any municipality there is at any time no council or an insufficient number of councillors to form a quorum. The Act of 1906 was amended in 1908, and again in 1911.

(i.) **Formation of Councils.** In the case of municipalities not divided into wards the council is to consist of the number of members, being a multiple of three assigned to it by the Governor, while the councils of municipalities which are subdivided consist of

three councillors for each ward. Any resident elector is eligible to act as a councillor unless he is disqualified as being an interested person, a bankrupt or convict, or as undergoing a sentence of imprisonment, or as insane. The warden is elected by the councillors from their own body.

The functions of councils, their borrowing powers, the levying of rates, and the constitution of local and water districts have been referred to in detail in previous issues.

(ii.) *Qualification of Electors.* Both owners and occupiers of property within a municipality are allowed plurality of votes according to the following scale:—

Annual Value of Property	} Under £30. £30 to £80. £80 to £160. £160 to £240. £240 to £360. £360 and upwards.					
Number of Votes	1	2	3	4	5	6

In the case of joint owners or occupiers the number of votes according to the above scale is equally divided as far as possible, and the vote or votes which cannot be so divided may be given by such one of the joint owners or occupiers as may be appointed by the others. The provisions of the Acts relating to voting by post at parliamentary elections may be made applicable to any municipal election on the petition of the council to the Governor.

3. **Annual Value, Revenue, and Expenditure of Municipalities.**—The following table shews the annual value, total receipts, and expenditure of municipalities for the years 1908 to 1911 inclusive:—

**TASMANIA.—ANNUAL VALUE, REVENUE, AND EXPENDITURE OF MUNICIPALITIES,
1908 to 1911.**

Year.	Number of Municipalities.	Annual Value of Ratable Property.	Revenue.				Expenditure. ²
			From Rates.	From Govt.	From other Sources. ¹	Total.	
		£	£	£	£	£	£
1908 ...	51	1,340,248	142,466	40,254	186,466	369,186	353,699
1909 ...	51	1,404,328	173,453	44,293	92,244	309,990	318,501
1910 ...	51	1,459,917	147,750	35,616	87,994	271,360	266,108
1911 ...	51	1,492,533	150,233	35,215	88,365	280,165	307,334

1. Including sums derived from loans. 2. Including repayments of loans.

According to the latest estimate made by the Commissioner of Taxes the capital value of ratable property in 1911 was £30,924,993.

4. **Total Revenue and Expenditure of Local Bodies.**—Particulars as to Road Boards and Road Trusts are given in the chapter of this book on "Roads and Bridges." In addition to the local authorities already mentioned, Marine Boards have been established at seven ports in Tasmania for the purposes of constructing and maintaining wharves and jetties and of controlling all matters relating to the shipping in the respective ports. Twenty water trusts and forty cemetery trusts have also been established in connection with municipal bodies. The subjoined statement shews the total revenue and expenditure for all local bodies, exclusive of all amounts contributed by the general Government, during each financial year from 1909 to 1912 inclusive:—

TASMANIA.—REVENUE AND EXPENDITURE OF ALL LOCAL BODIES, EXCLUSIVE OF AMOUNTS CONTRIBUTED BY THE GENERAL GOVERNMENT, 1909 to 1912.

Particulars.	1908-9.	1909-10.	1910-11.	1911-12.
*REVENUE.				
Marine Boards and Lighthouses	£ 72,810	£ 74,723	£ 72,507	£ 72,676
Municipalities	396,186	309,990	271,360	280,165
Road and Bridge Trusts	†	†	†	†
Cemetery Trusts	†	†	|| 894	918
Town Boards	†	†	†	†
Water Trusts	2,281\$	2,325	2,267	2,272
Total	471,277	387,038	347,028	356,031

†EXPENDITURE.				
Marine Boards and Lighthouses	£ 69,213	£ 82,627	£ 68,894	£ 68,529
Municipalities	353,699	318,501	266,108	307,334
Road and Bridge Trusts	†	†	†	†
Cemetery Trusts	†	†	|| 769	902
Town Boards	†	†	†	†
Water Trusts	2,334\$	1,923	4,138	1,834
Total	425,246	403,051	339,909	378,599

* Exclusive of amounts contributed by the general Government. † Exclusive of expenditure from Government contributions. ‡ Included in municipalities under the new Local Government Act. § Receipts and expenditure of eight water trusts not included in municipalities. || Exclusive of a number of cemetery trusts incorporated in the newly organised municipalities.

5. Hobart Water Supply.—The original water supply of Hobart was obtained from a stream known as the Hobart Rivulet, flowing from Mount Wellington, the works being carried out in 1831 by the Imperial Government. These works consisted of an aqueduct and a line of cast-iron pipes, the water being distributed to several points known as "wells." By an Act of the State Parliament passed in 1860 the works were transferred to the municipality. Under this Act certain additional streams flowing from Mount Wellington were acquired as sources of supply, and a storage reservoir containing 45,000,000 gallons was constructed. The catchment area on Mount Wellington at present comprises an area of 4200 acres, the sources of supply having been extended at various times as far as the North West Bay River, fifteen miles from Hobart.

(i.) *Storage Reservoirs.* There are two storage reservoirs about 2½ miles from the city. One contains 68,000,000 gallons and is 502 feet above sea-level, while the other contains 45,000,000 gallons and is 447 feet above sea-level. The whole of the supply is by gravitation. The water is brought from the various streams by means of stone aqueducts and cast-iron pipes to the reservoirs, and thence by four 10-inch cast-iron mains, of which three lead to the distributing reservoirs and one direct to the shipping and southern portion of the city.

(ii.) *Capital Cost, Tenements Connected, Length of Mains, Revenue and Expenditure.* The total capital cost to the end of 1912 was £228,229, but a considerable amount of reticulation work has been done out of revenue and not charged to capital account. The outstanding loans at the end of 1912 amounted to £182,175. At the same

date the number of tenements supplied in the city and suburbs was 8013, the population 38,985 and the length of reticulation mains $84\frac{3}{4}$ miles. * The revenue and expenditure for the last six years were as follows :—

HOBART WATERWORKS.—REVENUE AND EXPENDITURE, 1907 to 1912.

Particulars.			1907.	1908.	1909.	1910.	1911.	1912.
			£	£	£	£	£	£
Revenue ...	...	...	21,802	19,719	20,091	20,643	31,207	23,858
Expenditure	...	...	17,785	22,901	23,729	22,238	20,881	20,584

(iii.) *Proposed Extensions.* Parliamentary sanction to borrow £93,000 has been obtained for the purpose of improving the water supply of the city and suburbs of Hobart; £75,000 of this amount is to be spent on a new storage reservoir, and a contract for the construction of the dam for £56,500 has been let, the balance being retained for expenditure on other works connected with the scheme.

6. **Hobart Sewerage System.**—A scheme for the construction of a sewerage system in Hobart was adopted in 1903. The sewage is discharged into the estuary of the River Derwent. Up to the end of the year 1912 about 70 miles of sewers had been laid at a cost of about £183,370, and 6560 tenements (out of a total of 6716) had been connected. The revenue for the year was £10,284. The scheme, which is intended to sewer over 2000 acres so as to serve an estimated population of about 30,000 people, is almost completed.

7. **Fire Brigades.**—Under the present system, the Government, the City Council, and the Fire Insurance companies contribute equally to the annual expenditure of the Hobart Fire Brigade. It is intended to increase the scope of operations so as to include in the metropolitan district the suburbs of Queenborough, New Town and Glenorchy. Under the new scheme, the estimated annual cost is £2700. There are volunteer brigades under the control of local boards in most of the larger centres of population.

§ 8. Local Government Finance.

1. **Introduction.**—In the preceding parts of this section certain particulars have been given regarding local authorities in each individual State. It is proposed to here give in a comparable form for each State particulars regarding the financial operations of local governing bodies. The areas controlled by these bodies are variously known in the several States as cities, towns, boroughs, shires, municipalities, municipal districts, and road districts. The particulars given in the tables in the two next paragraphs relate to financial years ending as follow:—New South Wales: for the calendar year 1911. Victoria: 30th September, 1911, except Melbourne, 31st December, and Geelong, 31st August, 1911. Queensland: Calendar year, 1911. South Australia: Corporations, 30th November, and district councils, 30th June, 1911. Western Australia: 31st October, 1911, except road districts, 30th June, 1911. Tasmania: Calendar year, 1911.

2. **Number, Revenue, Expenditure and Valuation of Local Authorities.**—The following table gives particulars of the number, revenue, expenditure, and valuation of local authorities in each State and in the Commonwealth during the year 1911. It may be noted that, excepting in Tasmania, the metropolitan water supply systems are not under municipal control; the particulars given of revenue and expenditure for the five States other than Tasmania do not, therefore, include revenue and expenditure on account of these systems.

NUMBER, REVENUE, EXPENDITURE, AND VALUATION OF LOCAL AUTHORITIES (a) IN EACH STATE, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
No. of local authorities (a)	324	207	166	177	146	51	1,071
RECEIPTS.							
Rates—	£	£	£	£	£	£	£
General ...	1,322,466	1,046,943	441,512	177,085	156,195	96,335	3,240,536
Other (b) ...	198,908	324,443	212,613	63,428	110,831	53,898	964,121
Government grants ...	381,492	157,141	11,308	44,437	128,070	35,215	757,593
Loans (c) & other sources	581,213	289,901	156,299	91,731	206,486	94,717	1,420,347
Total ...	2,484,009	1,818,428	821,732	376,681	601,582	280,165	6,382,597
EXPENDITURE.							
Works, services, etc. ...	1,684,218	1,195,132	558,569	226,107	304,643	181,059	4,149,728
Interest on loans and overdrafts ...	175,535	213,752	14,283	8,731	41,730	38,183	492,214
Redemptions, sinking funds, etc. ...	(d) 36,610	66,860	32,643	11,293	30,290	4,252	181,948
Administration ...	268,629	168,303	74,385	44,394	45,836	35,498	637,045
Other ...	(e) 200,565	226,419	128,719	87,913	147,511	48,342	839,469
Total ...	2,365,557	1,870,466	808,599	378,438	570,010	307,334	6,300,404
VALUATIONS.							
Capital value of property	£164,034,416	275,078,517	52,788,079	75,943,584	20,362,374	30,924,993	619,131,963
Annual value of property	(f) 2,498,429	14,774,660	(g)	3,645,542	1,321,715	1,492,533	(g)

(a) Including particulars for all areas controlled by local governing bodies responsible for the construction and maintenance of roads and streets, such areas being variously known in the several States as cities, towns, boroughs, shires, municipalities, road districts, etc. (b) Exclusive of rates for water-supply and sewerage in metropolitan and most other principal towns, such rates being collected by special boards or general Government. (c) Exclusive of loans in connection with extraordinary works of construction. (d) Sydney only. (e) Including redemptions, sinking funds, etc., for municipalities other than Sydney. (f) Unimproved capital value. (g) Not available.

3. Local Government Loans, 1911.—The following table gives particulars for each State of loans raised by local authorities during the year 1911, of loans current at the end of that year, of liability on account of interest and sinking fund, and of loans maturing during 1911:—

PARTICULARS OF LOANS RAISED BY LOCAL AUTHORITIES, 1911.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
Loans from general Government—							
Raised during year ...	...	...	45,532	...	15,500	17,040	78,072
Current at end of year ...	...	188,393	341,982	...	89,770	282,643	902,788
Loans from other sources—							
Raised during year ...	1,197,360	101,918	(a)	12,975	40,700	53,006	(a)
Current at end of year ...	5,327,228	4,643,591	(a)	200,350	804,894	636,176	(a)
Total—							
Raised during year ...	1,197,360	101,918	(a)	12,975	56,200	70,046	(a)
Current at end of year ...	5,327,228	4,831,984	1,195,456	200,350	894,664	918,819	13,368,501
Current loans, exclusive of those obtained from general Government, raised within the C'wealth	4,672,769	4,643,591	(a)	200,350	804,894	...	(a)
Annual liability on account interest	209,971	206,763	14,008	8,013	41,388	38,938	519,081
Total sinking fund at end of year	331,196	894,710	39,108	28,887	193,528	115,489	1,602,198
Amount loans maturing during year							
Redeemed ...	...	(a)	(b)	3,514	7,980	33,559	(a)
Renewed ...	145,106	(a)	(a)	4,013	...	70,715	(a)

(a) Not available. (b) In the case of loans from Government the periodical payments include interest and sinking funds. (c) Excluding £2364 credited to four municipalities, but which was not in the hands of the Sinking Fund Trustees on 31st October, 1911.

SECTION XXVII.

INDUSTRIAL UNIONISM AND INDUSTRIAL LEGISLATION.

§ 1. Development of Trades Unions in Australia.

1. **General.**—In Australia, industrial unionism paved the way for industrial legislation. Conditions of employment were on the whole favourable to the investigation of industrial problems; and experimental legislation was possible because of the simplicity and directness of the aim of those engaged in industrial occupations. Moreover, the fact of the non-existence of the complex problems and organisations of older countries rendered initial legislation comparatively easy. Hence rapid changes in laws regulating industry occur and are likely to occur. To a great extent the trades unions were responsible for these laws. They steadily and continuously urged an amelioration of the condition of the working man, and by organisation and discipline they presented a united front to opposing forces, and attained many advantages by a recognition of the principle that unity is strength. Their efforts have resulted in improved conditions, particularly short hours, a healthier mode of life, and safeguarding against accident. One great aim of present-day industrial legislation has been said to be to extend "the reasonable comforts of a civilised community" to those engaged in every branch of industry. The standard of wages must therefore be maintained at a satisfactory level. Large organisations have been able to attain their ends by force of numbers, and, in the case of the great bulk of the artisan and similar classes, through the solidarity of their unions. The smaller and less perfectly organised industries, unable to maintain an effectual struggle with hope of success, are now receiving, by legislative enactment, the benefits already gained by the trades unions. Industrial organisation by means of unions now tends to embrace all classes of wage-earners.

While the demands of the early unionists have almost in their entirety been conceded by the employer, unionism nevertheless continues. Industrial legislation aims at restricting industrial warfare by a satisfactory adjustment of industrial differences, without derangement of the economic system, but it has not yet reached the stage when conflicts between employer and employees cease.

Each State of the Commonwealth has enacted, with considerable elaboration, legislation respecting trade unions and respecting the regulation of the conditions of industrial life, particularly those of factory and shop employment. Machinery for the regulation of wages and other matters connected with employment has also been established by legislation.

At the present time there is an obvious tendency to adjust such matters throughout Australia on uniform lines. The industrial condition of any State of the Commonwealth naturally reacts quickly on any other State. This is one of the consequences of a unified tariff, and of the fact that the general economic conditions of one part of the Commonwealth must necessarily affect very intimately every other part. An expression of the intimacy of these economic and industrial relations of different parts was seen, for example, when the Arbitration Court in New South Wales refused to fix wages in the boot trade in that State at a higher rate than that fixed by the Wages Board in Victoria, because of the additional burden which such a rate would place on local manufacturers. Collective bargaining is encouraged, through the medium of legal tribunals where necessary, argument and diplomacy taking the place of open strife. Legislation gives legal form and status to the unions, and allots to them legal responsibility. The workman is encouraged, and in some cases compelled, to treat with his employer through his union, and in some cases the industrial courts are authorised to direct that preference be given to unionists.

2. **History of Unionism in Australasia.**—(1.) *Commencement of Unionism : the Eight Hours System.* The first trade union in Australia was the "Operative Masons' Society," established in Melbourne in 1850. In 1851 a branch of the "English Amalgamated Society of Engineers" was founded in Sydney. For many years the only unions existing were practically those formed by the several branches of the building trades. They were all subject to the English law prohibiting conspiracies and combinations in restraint of trade, though it does not appear that such law was ever put in force in Australia. The main object of the early unions in Australia was the limitation of the working week to forty-eight hours. The minor and friendly society benefits that were usual amongst the unions of older countries were also desired; but the chief aim was the establishment of the eight hours principle, and that aim for many years was the chief link between the unions. It is difficult to obtain detailed information concerning the unions prior to trade union legislation, but their early history generally resolves itself into an account of the early efforts put forth by metropolitan operatives to secure the limitation of the working day to eight hours. The desire to restrict Chinese immigration operated as a further incentive to combined effort. For the restriction to be effective, co-operation between the colonies was necessary. The question therefore promoted enlargement of view, and fostered amongst the workmen of Australia the sense of community of interest.

(ii.) *New Zealand.* The system was first put into practice in Australasia in 1848 by the "Otago Association," which purchased an area of land upon Port Chalmers, N.Z., and proceeded to build the town of Dunedin, under a system which recognised the eight hours day, thus instituting, in the New World of the south, that period of toil as the limit of the working day. Thus the system began voluntarily in New Zealand long before the unions that demanded and acquired it in Australia had come into existence. But many years elapsed in the Dominion before trades unionism became an established fact. The first Congress of New Zealand Trades was held in 1885. In that year, too, the general celebration of the eight hours' principle by the combined trades was inaugurated.

(iii.) *New South Wales.* In New South Wales, the operative masons obtained the eight hours concession in 1855, after a strike; but little development of the movement was noticeable until 1871, in which year four eight-hour trades—the brickmakers, stone-masons, labourers, and carpenters—inaugurated the annual celebration.

(iv.) *Victoria.* The first Melbourne Eight Hours' procession was held in 1856, the trades taking part being the masons, bricklayers, carpenters and joiners, plasterers, painters, and slaters. In the following year nine trades and about 700 men took part in the function; but the principle of the Eight Hours' Day had been recognised, and new unions were quickly established under the influence and guidance of the pioneers of the movement.

(v.) *Queensland.* After the fever of the gold rush to the Fitzroy River had subsided, settled conditions prevailed in the building industry, and the trades, being well established and organised in Queensland, celebrated their inaugural festival of the eight hours in 1866. In Brisbane, as in Melbourne, the pioneer trade was the stonemasons.

(vi.) *South Australia.* In South Australia, the establishment of the eight hours system by the unions was accomplished in 1873, the building trades, represented by the stone-cutters, painters, and carpenters, again being the leaders.

(vii.) *Western Australia.* The discovery of gold in Western Australia caused rapid development in the infant cities and towns of that State, and mechanics found abundant employment in the building trades. Unions were soon formed, and the eight hours became an established system in 1896.

(viii.) *Tasmania.* Trade Unions were established in Tasmania in 1874, the shipwrights of Hobart being the pioneer society. Here, as on the mainland, the eight hours' day was the chief aim of the operatives, and here, as in Sydney, it was conceded only after a strike. Within a few years, the general system of trades unions was instituted. The inaugural celebration of the system was celebrated in 1890.

(ix.) *The System Universal throughout Australasia.* No provision for eight hours was made in the original documents which set out the conditions of labour under which the members of the Otago (N.Z.) Association were to work in 1848. It was intended to insert a clause embodying the principle, but it was found that such a clause would be inoperative, as contracts to bind free settlers to serve under any conditions of labour beyond the seas were not provided for by any Imperial Statute. The system, however, was tacitly agreed to by both parties, and quietly and voluntarily the eight hours' day was established. Not so amicable were the methods by which it was acquired in the other colonies. There had to be unions of men and unions of trades, before the requisite forces were available to overbear opposition to the system, and, at any rate in two cases, the tradesmen resorted to strikes before the concession was granted. Generally it may be said that trades unions in the Commonwealth sprang out of the desire for an eight hours' day; and with the Western Australian celebration of 1896, trades unionism, with its eight hours' charter, completed its circuit of the Commonwealth. From 1880 to 1890 there was, in the States where industry was systematised, great activity in the organisation of labour, more particularly at the end of that period. In sympathy with the widespread industrial unrest in England the occurrence of similar unrest in Australia drew the wage-earners into the unions in large numbers.

(x.) *Organisation of Unions.* The first regular association of unions in Australia was the Trades Committee in Melbourne, formed in 1859, which afterwards became the present Trades and Labour Council. Similar councils now exist in all the States. Composed of delegates from the unions, they exercise a general care over the interests of their members.

(xi.) *Union Acts.* The Trade Union Acts of England and the collateral Conspiracy and Protection of Property Act were copied by the States, the Acts also providing for unions of employers. Except in Western Australia, the latter provision has been but slightly utilised, as apparently it offers no well-defined inducement. South Australia adopted the Acts in 1876, New South Wales in 1881, Victoria in 1894, Queensland in 1886, Tasmania in 1889, and Western Australia in 1902.

The Acts referred to provide for the legal recognition of combinations which come under the definition of trade unions; the registration of unions of seven or more persons, the registration of councils or other bodies to which registered trade unions are affiliated, the vesting of union property in registered trustees, with penal provisions in respect of defaulting officers. The registered unions are required to furnish annual returns of members and funds to a special department.

3. Operations and Organisation of Unions subsequent to the Acts.—(i.) *Unions.* Except as hereinafter mentioned, the Unions do not avail themselves of the Trade Union Acts to any large extent, in many cases neglecting to register.

In some States there is a considerable difference between the numbers of registered and unregistered unions, as, for instance, in Victoria, where there are 151 unions and only three are registered.

The failure to register under the Trade Union Acts does not deprive the unions of the privileges conferred by the Conspiracy Acts.

(ii.) *Membership of Unions.* At the end of the year 1912, there were, in Australia, 433,224 members of trade unions.

(iii.) *Concerted Action.* The consummation of the eight hours' system, at which the early unions had aimed, was followed by demands for further concessions and privileges. An intercolonial congress of delegates of trades unions, modelled upon a similar conference of labour organisations in Great Britain, was first held in Sydney in 1879. At the second congress in Melbourne, in 1884, sixty-nine delegates from New South Wales, Victoria, and South Australia were present, representing forty-one unions, branches, or societies. Following the methods of European associations the Australian unions sought to achieve an improved condition for their members by the establishment of rules concerning minimum wage, limited hours of toil, the

restriction of the number of apprentices and improvers, and the prohibition of the employment of non-union labour; political reforms, such as payment of Members of Parliament, "one man one vote," were also agitated. Some of the unions refuse to admit to membership any but skilled journeymen, on the ground that their object is to encourage the attainment of proper skill.

(iv.) *Representation in Parliament.* It was during the decade 1880-1890 that the trade unions of Australia espoused direct legislative representation and advocated State intervention between employer and employee. This policy has been called "new unionism." In New South Wales, trade unions obtained direct representation in Parliament in 1881, and again in 1883. A resolution affirming the desirability of Parliamentary representation of labour being carried at the congress of 1884, members representing the special interests of the wage-earners were elected to the Legislatures of some of the States, but little action was taken by the unions to obtain representation by men chosen from among their own ranks until after the great labour troubles of 1890-1892. In that period serious strikes occurred in the maritime, shearing and mining industries, and it was then that the Labour Party proper was formed. One direct result of the outbreak was the recognition of the desirability of peaceful settlement of disputes. The political labour party was accordingly organised, and has since held considerable power in most of the States, frequently occupying the Treasury benches. In 1904, 1908-9, and 1910-13 Labour Governments occupied the Commonwealth Treasury Benches, the elections held in April, 1910, having resulted in the Labour party gaining an absolute majority in both of the Federal Houses of Parliament. The present Governments in New South Wales and Western Australia are Labour. South Australia and Queensland have also had Labour Governments; and in Victoria and Tasmania the Labour party is an important element in Parliament.

Triennial federal conferences laid down a policy for the party. The Political Labour Council controls political and the Trades Hall Council trade union matters. The former consists of delegates from both unions and "branches." The branches are coterminous with State electoral districts, and nominate candidates for those districts. Candidates for the Commonwealth Senate are balloted for by all league members in the State, and for the Commonwealth House of Representatives by the branches in the constituency.

4. Registered Trade Unions.—(i.) *Unions of Employees.* The benefits conferred by registering Trade Unions are not, in some of the States, held in much repute; consequently the statistics of registered trade unions of employees not only do not represent the position of unionism, but, in addition, the statistics themselves for past years are so defective as to be practically valueless. The particulars furnish no reliable indication of the numerical and financial position of Trade Unions. It will be seen that some of the registered unions fail to supply returns; this non-supply may lead to cancellation of the registration. Some of the unions have obtained the cancellation of their certificates of registration, the apparent reason being that they proposed registering under the Commonwealth Conciliation and Arbitration Act. In some States considerable activity has been displayed in the formation of new unions. In others the benefits sought are obtained by other means. In Queensland, some of the largest labour unions withdrew from registration during 1911, mainly on account of the necessity for closer restriction of their objects as set forth in their rules, consequent on legal decisions affecting trade unions. The registered trade unions were as follows at the end of 1911:—New South Wales: 191 unions; 153,504 members; receipts, £163,448; expenditure, £146,959; funds, £114,687. Of these, eleven were unions of employers, with 2977 members. There were also six miscellaneous unions, having no members in the ordinary sense of the term. Victoria: 6 unions, 859 members; receipts, £1045; expenditure, £750; funds, £483. Queensland: 40 unions; 8195 members; receipts, £15,168; expenditure, £13,036; funds, £11,185. Six were unions of employers, with a membership of 277. South Australia: 21 unions, of whom only 13 furnished returns, shewing 4653 members; receipts, £7641; expenditure, £7452; funds, £15,253. Western Australia: 152 unions (including 4 industrial associations, and one Trade and Labour Council); members, 28,934; receipts, £52,640;

expenditure, £47,526; funds, £39,967. Of these, forty-six, with 554 members, are unions of employers. Tasmania: 3 unions, of which particulars were not furnished.

5. **Registration under Industrial Arbitration Acts.**—Western Australia, and New South Wales up to 30th June, 1908, were the only States with Industrial Arbitration Acts under which industrial associations could be, and actually were, registered. The number of registered unions in New South Wales shewed a gradual increase from 1902 to 1907, the figures in the latter year being 109 unions of employers, with 3165 members, and 119 unions of employees, with 88,075 members. Under the Industrial Disputes Act, which succeeded the Arbitration Act of 1901, the information is not required to be furnished. Since the Act of 1908 has operated, industrial organisation has proceeded rapidly, owing to a very evident general desire on the part of the workers to obtain the status necessary to entitle them to the advantages offered by the Act. In Western Australia, the employers' unions numbered 45, with 441 members, in 1904; 59 unions, with 520 members, in 1905; 57 unions, with 534 members, in 1906; 56 unions, with 552 members, in 1907; 48, with 409 members, in 1908; 47, with 408 members, in 1909; 46, with 444 members, in 1910; 46, with 554 members, in 1911. From 1904 to 1908 unions of employees were in a fairly stationary condition. Since 1909, however, there has been a rapid expansion. At the end of 1904 and 1905 there were 140, with 15,743 and 15,461 members respectively; in 1906 there were 130 unions, with 16,015 members; in 1907, 121 unions, with 14,544 members; in 1908, 121 unions, with 15,187 members; in 1909, 122 unions, with 17,282 members; in 1910, 130 unions, with 20,429 members; and in 1911, 152 unions, with 28,934 members. These figures include councils and associations. Registration under Commonwealth legislation began in 1906. In that and the four following years, there was but one union of employers; another was registered in 1911. The unions of employees registered were 20 in 1906, with 41,413 members; 24, with 57,806 members, in 1907; 37, with 69,536 members, in 1908; 7, with 14,161 members, in 1909; 10, with 3760 members, in 1910. Twenty-four unions of employees were registered in 1911. The membership given above is that at time of registration.

6. **Total Number of Unions, 1912.**—As already stated, the figures for trade unions registered under the Acts do not represent the position of unionism in Australia. In 1912 the Labour and Industrial Branch of the Commonwealth Bureau of Census and Statistics was established, and by the cordial co-operation of the officials of the labour organisations, comprehensive figures relating to the development of organised labour are now available. The following table gives particulars of the number of trade unions, the number of branch unions, and the number of members in each State and the Commonwealth at the end of 1912:—

TRADE UNIONS, BRANCH UNIONS, AND MEMBERS, STATES AND COMMONWEALTH, 1912.

State.	Number of Separate Unions.	No. of Branches.	No. of Members.
New South Wales	177	453	192,626
Victoria	151	241	116,557
Queensland	67	226	44,768
South Australia	78	62	37,336
West Australia	97	177	33,282
Tasmania	51	33	8,655
Total	621	1,192	433,224
Commonwealth*	408†	1,405	433,224

* Allowing for interstate excess. † Number of distinct organisations and interstate groups of organisations in the Commonwealth—not the total number of organisations, which are practically independent and self-governing. (See next page.)

In the preceding table the number of separate unions in each State furnishes the number of unions which are represented in each State, exclusive of branches within a State. That is to say, each union represented in a State is only counted once, regardless of the number of branches in that State.

Except in the last line, the number of branches indicates the number of branches of State head offices, which may, of course, themselves be branches of an inter-State or larger organisation. In taking the total number of separate unions in the Commonwealth (see last line), it is obvious that, in the case of inter-State and similar unions, there will be duplication, since each such union is counted once in each State in which it has any branches. In the figures given in the last line allowance has been made for this duplication. State branches of interstate or federated unions, as well as sub-branches within a State, are included under the heading "Branches" in the third column—last line. It should be observed, however, that the scheme of organisation of these interstate or federated unions varies greatly in character, and the number of separate Commonwealth unions does not fairly represent the number of practically independent organisations in Australia. In some of these unions the State organisations are bound together under a system of unification with centralised control, while in others the State units are practically independent and self-governing, the federal bond being loose and existing only for one or two specified purposes. It may be seen, therefore, that there are 408 distinct organisations and interstate groups of organisations in the Commonwealth, having 1405 State branches and sub-branches, and a total of 433,224 members.

7. Development of Trade Unions in Australia, 1891 to 1912.—The following table shews for the years specified the total number of trade unions in the Commonwealth, and the number and membership of those unions for which returns are available. The estimated total membership of all unions is shewn in the last line. The number of unions specified is the sum of the number of separate unions represented in the several States, no deduction having been made for interstate excess.

The figures given do not include particulars of comparatively small and unimportant unions which were in existence prior to the year 1912, but which, by that year, had either become amalgamated with other unions or had been disbanded or become defunct. Particulars for the more important unions in existence prior to 1912, but not in existence in that year, have, however, been included in all cases where possible. The actual returns received at this Bureau from trade unions have, in some instances, where memberships for past years were not given, been supplemented from particulars published by the State Registrars of Trade Unions.

NUMBER AND MEMBERSHIP OF TRADE UNIONS IN COMMONWEALTH, 1891 to 1912.

Particulars.	1891.	1896.	1901.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Total number of unions	124	134	198	302	393	378	419	482	573	621
No. of unions for which membership available	72	83	139	253	286	334	375	442	542	621
Membership of these unions	31,871	34,108	68,218	147,049	172,310	212,483	244,747	277,047	344,999	433,224
Estimated total membership of all unions	54,888	55,066	97,174	175,529	194,602	240,475	273,464	302,119	364,732	433,224

These figures shew that while the number of unions in 1912 was just over five times the number in 1891, the estimated membership during the same period increased nearly eight times. During the last six years the estimated annual increase in membership was greatest in the year 1912, when it amounted to no less than 68,492.

The present tendency of the trade union movement in Australia is towards "closer unionism," generally by the organisation of the workers in two or more States into interstate or federated unions, and by the grouping together of trades or industries more or less closely allied. Particulars are not available for past years as to the number of separate organisations in the Commonwealth, that is, allowing for interstate excess in

the enumeration of unions within each State. It appears certain, however, that the number of separate organisations and interstate groups of organisations in the Commonwealth has, owing to the tendency referred to, increased to a less extent than the figures in the preceding table indicate.* It is expected that in future this tendency will be clearly reflected in the returns, in which deductions will be made for interstate excess.

8. **Interstate or Federated Unions, 1912.**—The following table gives particulars as to the number and membership of interstate or federated unions in 1912 :—

**NUMBER AND MEMBERSHIP OF INTERSTATE OR FEDERATED UNIONS
IN THE COMMONWEALTH, 1912.**

Particulars.	Unions Operating in—					Total.
	2 States.	3 States.	4 States.	5 States.	6 States.	
Number of Unions ...	20	11	17	14	10	72
Number of Members ...	31,358	18,147	55,517	43,548	131,201	279,771

It appears, therefore, that 72 out of the 408 separate associations and groups of associations in the Commonwealth are organised on an interstate basis. The membership of these 72 unions amounts to 279,771, or no less than 64.6 per cent. on the total membership (433,224) of all unions.

9. **Central Labour Organisations.**—In each of the metropolitan towns, as well as in a number of other industrial centres, delegate organisations, consisting of representatives from a group of trade unions, have been established. Their revenue is raised by means of a per capita tax on the members of each affiliated union. In most of the towns where such central organisations exist, the majority of the local unions are affiliated with the central organisation, which is usually known as the Labour or the Trades Hall Council or the Labour Federation. In Queensland and Western Australia a unified system of organisation extends over the industrial centres throughout each State. In each of these States there is a provincial branch of the Australian Labour Federation, having a central council and executive, a metropolitan and branch district councils, to which the local bodies are affiliated. The central council, on which all district councils are represented, meets periodically. In the other four States, however, the organisation is not so close, and though provision usually exists in the rules of the central council at the capital town of each State for the organisation of district councils or for the representation on the central council of the local councils in the smaller industrial centres of the State, the councils in each State are, as a matter of fact, independent bodies.

The table below shews the number of metropolitan and district or local labour councils, together with the number of unions and branches of unions affiliated therewith, in each State in February, 1913 :—

CENTRAL LABOUR ORGANISATIONS—NUMBER AND UNIONS AFFILIATED,* 1913.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'th.
No. of Councils ...	3	4	2†	4	11	1	25
Approximate No. of Unions and Branch Unions Affiliated ...	151	186	21	73	130	23	584

* On page 1015 it is shewn that the number of separate organisations and interstate groups of organisations in the Commonwealth in 1912 was 408, compared with 621, the sum of the separate unions in the several States.

† In addition, two important unions are directly affiliated to the Provincial Council of the Australian Labour Federation.

The figures given in the above table as to number of unions do not necessarily represent separate unions, since the branches of a large union may be affiliated to the local trades councils in the several towns in which they are represented.

Between the trade union and the central organisation of unions may be classed certain State or district councils, organised on trade lines and composed of delegates from separate unions, the interests of the members of which are closely connected by reason of the occupations of their members, such, for example, as delegate councils of bakers, bread carters and mill employees, or of unions connected directly or indirectly with the iron, steel or brass trades, or with the building trades.

§ 2. Laws Relating to Conditions of Labour.

1. Tabular Statement of Statutes affecting Labour.—The Statutes in force at the beginning of 1912 in the several States of the Commonwealth, which, more or less directly, affect the general conditions of labour, are shewn in the table below. Where merely an incidental reference to labour conditions is made in a statute, as is the case with, *e.g.*, the Hawkers and Pedlars Act 1892 of Western Australia, or the Firms Registration Act 1899 of South Australia, or the Health Acts generally, the Statute is not included in the table.

LABOUR LAWS—TABLE OF STATUTES IN FORCE IN AUSTRALIAN STATES, 1913.

New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.
1. General—					
Factories & Shops Act 1912	Factories and Shops 1912	Factories and Shops 1900 and 1908	Factories 1907, 1908 and 1910	Factories 1904 (2)	Factories 1910 and 1911
Early Closing 1899, 1900, 1906, and 1910	Factories and Shops 1912 (2)		Early Closing 1911	Early Closing 1902, 1904 (2), 1911 and 1912.	Wages Boards 1910 and 1911
Saturday Half Holiday 1910					Chimney Sweepers 1882
Clerical Workers 1910					Shops Closing 1911
2. Prevention of Strikes and Regulation of Rates of Wages—					
Industrial Arbitration 1912	Factories and Shops (as above)	Industrial Peace Act 1912	Factories Acts 1907-10	Industrial Arbitration Act 1912	—
3. Mining Industry—					
Mines Inspection 1901	Mines 1897	Mining 1898, 1901 and 1902	Mining 1893	Mines Regulation 1906	Mining 1900, and 1911
Coal Mines Regulation 1902, 1905, and 1910	Coal Mines Regulation 1909	Mines Regulation 1910		Coal Mines Regulation 1902	
Miners' Accident Relief 1900, 1901 and 1910				Mining 1904	
4. Security of Wages to Wage Earners—					
Contractors' Debts 1897	Employers and Employees 1890, 1891 and 1901	Contractors' & Workmen's Lien 1906	Workmen's Liens 1893-6	Workmen's Wages 1898	—
		Wages 1870 and 1884			
Attachment of Wages Limitation 1900	—	Wages (as above)	Wages Attachment 1898	—	Wages Attachment 1900

LABOUR LAWS—TABLE OF STATUTES.—Continued.

New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania
*Truck 1900 " 1901		Factories and Shops (as above)	Factories (as above)	*Truck 1899 * " 1900 * " 1904	—
Bankruptcy (preference wages) 1898 to 1899	Insolvency 1897	Insolvency 1874 Insolvency 1876	Insolvency 1886 1887 1896	Bankruptcy 1892 1898	Bankruptcy 1870 Bankruptcy 1899
5. Accommodation, Homes, &c.—					
Shearers' Accommodation 1901	—	Shearers' and Sugarworkers' Accommodation 1905 Do. 1906	Shearers' Accommodation 1905	—	—
—	Closer Settlement (Workers' Homes) 1904	—	—	—	—
—	—	Workers' Dwelling 1909 and 1912.	—	Workers' Homes 1911 Navigation 1904 1907 Merchant Shipping Act Application 1903	—
6. Inspection of Machinery, &c.—					
—	Boilers' Inspection 1906	Inspection of Machinery & Scaffolding 1908	Steam Boilers and Engine Drivers 1911 Lifts' Regulation 1908 Scaffolding Inspection 1907 and 1908	Inspection of Machinery 1904	Inspection of Machinery 1904 " " 1905 White Phosphorus Matches Prohibition 1905
7. Trade Unions—					
Trade Unions 1881	Trade Unions 1890	Trade Unions 1886	Trade Unions 1876	Trade Unions 1902	Trade Unions 1889
8. Relations of Masters and Servants—					
Masters & Servants 1902	Employers and Employees 1890, 1891 and 1901	+Apprentices 1828 " 1844 Master and Servants 1861	Masters & Servants 1878 Defence of Workers 1909	Masters and Apprentices 1873 Masters & Servants 1892	Masters & Servants 1850 " " 1851 " " 1852
—	Servants' Registry Offices 1897	—	—	Employment Brokers 1909	—
9. Liability in case of Accidents—					
Employers' Liability 1897	Employers' and Employees 1890 (Employers' Liability) and 1901	Employers' Liability 1886-8	Employers' Liability 1884-9	Employers' Liability 1894	Employers' Liability 1898 and 1899
Workmen's Compensation 1910	—	Workers' Compensation 1905 and 1909	Workmen's Compensation 1911	Workers' Compensation 1902 and 1909	Workers' Compensation 1910

* The "Truck" system, as applied to labour, was one by which the master obtained the labour of his servants in exchange for goods or commodities on which it is stated he generally secured a profit. The system is now almost entirely suppressed by the various statutes enacted. + New South Wales Act not repealed in Queensland after Separation in 1859.

2. Benefits sought to be Conferred by the Acts.—(i.) *General Provisions.* The legislation enacted has generally had for its object the shortening of hours, improving and fixing standard rates of wages, provision of sanitary accommodation, ventilation and cleansing of premises, safeguarding from accident, and general amelioration of the conditions of labour, particularly that of females and children, in factories. The principal provisions of these statutes are set out in the table hereinafter.

(ii.) *Historical.* The first Australian Factories Act was passed in 1873 in Victoria, and became law on 1st January, 1874. It was entitled "The Supervision of Workrooms and Factories Statute," and contained only six sections. Its principal provisions were (a) that any place in which not less than ten persons were engaged for hire in manufacturing goods should be constituted a factory; (b) that such factories, as to building, sanitation, etc., should be subject to regulations made by the Central Board of Health; and (c) that no female should be employed for more than eight hours in any one day without the permission of the Chief Secretary. The administration of the Act was entrusted entirely to the local Boards of Health, and the system was found to be less effective than was hoped. The conditions which have given rise to trouble in the old world tended to reproduce themselves in the young and growing industries of the States. Factory workers had to contend with the absence of security for a living wage, unsatisfactory sanitary surroundings, and unchecked and unscrupulous competition of Chinese in certain trades. The advocacy of legislation to control the conditions of employment became pronounced in Victoria in 1880, and a strike of tailoresses in Melbourne in 1882 led to a recognition of the real state of affairs. As a result of unsatisfactory working under the local governing bodies, and on account of agitation of the operatives, a commission was appointed in 1883, and reported the necessity of legislation for the regulation of factories, and in particular pointed out the fact that men were compelled to toil for as many as eighteen hours and women sixteen hours a day. It also shewed that the condition of out-workers was very undesirable, and that the apprenticeship system was frequently used to obtain labour without remuneration, apprentices being dismissed upon asking for payment at the end of their time. The Factories and Shops Act 1884, while providing for the suppression of many evils in respect of accommodation and lengthy hours, did not touch the two last mentioned. It provided for Government inspection, and also that six persons should constitute a factory if the premises were situated in a city, town or borough. In 1887 a short amending Act was brought in to remedy some defects that were found to exist. Its principal provision was that any place in which two or more Chinese were engaged should be deemed a factory. In 1893 a further enactment reduced the number of persons constituting a factory to four. Another Royal Commission sat in 1895, resulting in the Act of 1896, which dealt with matters previously untouched, and the system of regulation was carried on by the Act of 1900 and the complete codification of the law in 1905, and again in 1912.

Similar conditions to those which existed in Victoria were found to prevail in other States. New South Wales and Queensland first adopted regulative measures in 1896, South Australia in 1894, and Western Australia in 1902. Tasmania adopted the Victorian Act of 1873 in 1884.

The same remarks apply in a general way to the condition of employees in shops.

3. Limitation of Hours.—(i.) *Factories.* As already remarked, the adoption of the eight hours' system for adult males has generally been the outcome of the representations made by the trade unions. Except in New Zealand, there is no general legislation to enforce the principle, although there is now a general recognition of it. A week of forty-eight hours is the usual working week. The larger unions, however, have lately moved for a *net* day of eight hours, with Saturday half-holiday, no loading of other week days being permitted by way of compensating for the Saturday afternoon. Under this scheme there are, for five days, equal divisions for periods of labour, recreation, and rest, and four hours' work on Saturday, making a working week of forty-four hours. In the majority of occupations, forty-eight hours weekly is the recognised limit of work. On

the establishment of Wages Boards and Arbitration Courts, in the States where those institutions exist, the authorities thus created adopted the rule as part of their determinations and awards wherever it seemed reasonably practicable. In some of the larger classes of building trades, the hours have been reduced to forty-four a week, and in some technical and specialist trades, a lower maximum has been fixed, such for example, as the type-setting machine operators in Victoria, for whom the maximum has been fixed by the Wages Board at forty-two hours weekly. Reasonable provision is made by statute or award for work performed outside the scheduled hours. Organisations of employees, however, oppose overtime in any industry until all the operatives in that industry are working full time.

In the case of women and children there has been very general enactment in the States of the forty-eight hours' limit, and in addition, the maximum periods of continuous labour, and the intervals of cessation therefrom, have been prescribed in all the States. New Zealand has fixed a weekly maximum of forty-five hours for females and boys under 16. The first enactment of the forty-eight hours' limit in Australia was in 1873, when the Parliament of Victoria fixed that period for women and girls in factories.

(ii.) *Shops.* All the States have statutes containing provisions respecting the hours during which shops in large centres may be kept open for business. These provisions, in effect, not only limit the hours during which shop-hands may be employed; but apply also where the shops are tended by the proprietor alone, or by himself and family, with, however, certain exceptions. In Victoria, for example, shops wherein not more than one assistant, whether paid or not, was employed, were permitted to remain open for two hours a day longer than other shops of the same class. The object of this was to relieve the hardship which existed for such persons as, for example, widows who were wholly dependent for a livelihood upon the casual trade of small shops. It is, however, reported that little or no benefit accrued from the permission. In each of the States the closing time of shops, except those specially exempted, is 6 p.m. on four days of the week, 10 p.m. on one day (except 9 p.m. in Queensland, South Australia, and Western Australia), and 1 p.m. on one day—thus establishing a weekly half holiday. In Western Australia the opening hour is fixed at 8 a.m. In addition to fixing the closing hour, the total daily and weekly working hours are delimited in the case of women and children. In some States, butchers' shops must be closed an hour earlier than other retail establishments, the reason being the early hour at which assistants must start to attend to the markets and early morning trade.

(iii.) *Hotels, etc.* Establishments, the opening of which in the evening is presumably necessary for public convenience—such as hotels, restaurants, chemists' shops, etc.—are required to remain open for longer hours or are permitted to do business during hours prohibited in other establishments.

(iv.) *Half-holidays.* The provisions of the early closing laws differ somewhat in each State, but the main objects, namely, the restriction of long hours of labour, are identical throughout. Formerly, in some of the States, there were, and there are still in others, provisions making the early closing of a business, or the selection of a day for a half-holiday, dependent upon the option of the majority of the business people concerned, or upon the local authority. The anomalous results of the system whereby shops on one side of the street bounding two municipalities were open, when those upon the other side were closed, led to the introduction of the compulsory system, whereby the hours of business are absolutely fixed by statute. In Queensland, the day of the weekly half-holiday is fixed for Saturday. In Victoria also the Saturday half-holiday became compulsory in 1909, and in New South Wales in the following year, and there is a strong movement throughout the Commonwealth in favour of closing on the afternoon of that day.

(v.) *Exempted Trades.* The hours for shops exempted from the general provisions of the Acts are also prescribed, and special holidays are provided for carriers.

4. **Other General Conditions of Labour.**—Measures for the protection of life, health, and general well-being of the worker, tabulated hereunder, exist in most of the States. Though in some instances founded upon English legislation, many of the provisions are peculiar to Australia. Despite experience and continued amendment they have not even yet attained to a settled form. Of the Australian States, Victoria originally had the most complete system of industrial legislation. Other States gradually adopted the Victorian statutes, either *en bloc* or with amendments suggested by local conditions. Western Australia followed very closely the legislation of New Zealand, where also the measures for the amelioration of the industrial conditions are enforced by law.

5. **Administration of Factories and Shops Acts.**—The provisions of Factories and Shops Acts and of the Early Closing Acts in some of the States are consolidated under a single Act, but in others are separate enactments. The chief provisions of the principal Acts for registration, administration, record-keeping, etc., and of regulations under those Acts, are set out in the following summary :—

- (a) Factories are defined to be places where a certain number of persons are employed in making or preparing goods for trade or sale, or in which steam or other power is employed, or where special classes of industry are carried on. In some States the employment of a Chinese, in some of any Asiatic, constitutes the place a factory.
- (b) A Minister of the Crown administers the Act in conjunction with a Chief Inspector of Factories. Inspectors visit the factories with full powers of entry, examination, and enquiry; these are of both sexes, females being employed in that portion of the work where a woman is particularly necessary. Broadly speaking, these powers confer upon the Inspector the right to enter, inspect, and examine, at all reasonable hours by day and night, any factory where he has reason to think anyone is employed; to take a police constable, if necessary, to assist him in the execution of his duty; to require the production of all certificates, documents, and records kept by the occupier, in accordance with the terms of the enactments; to examine, either alone or in the presence of any other person, every person whom he finds in a factory; to make whatever examination he deems necessary to ascertain whether the provisions of the Act are complied with.
- (c) Registration of factories before occupation is obligatory. Description of premises and statement of the work to be done must be supplied, and a certificate of suitability of premises obtained.
- (d) A record of all employees, giving the names, ages, wages, and work of each under a certain age (18, 20, 21, etc.) must be kept and filed in the Chief Inspector's office.
- (e) Names and addresses of district inspectors and certifying medical practitioners must be posted; also the working hours, the holidays, and the name, etc., of the employer.
- (f) Records of out-work must be kept, containing the names and remuneration of workers, and stating the places where the work is done. Out-workers are required to register.
- (g) Places in which only the near kin of the occupier are employed are generally exempt from registration.
- (h) Meals may be prohibited in workrooms, etc. In some States occupiers are required to furnish suitable mealrooms.

- (i) The employment in factories of young children is forbidden, and medical certificates of fitness are required in the case of young persons under a certain age. Special permits, based on educational or other qualifications, may be issued for young persons of certain ages.
- (j) Guarantees of an employee's good behaviour are void unless made with the consent of the Minister.
- (k) Persons in charge of steam engines or boilers must hold certificates of service or competency.
- (l) Provision (safeguarding against accident) is made for the fencing off and proper care of machinery, vats, and other dangerous structures. Women and young persons are forbidden to clean machinery in motion or work between fixed and traversing parts of self-acting machinery while in motion; and dangerous trades are specified in which a minimum age is fixed. Notice of accidents must be sent to the district inspector. (Dangerous trades are generally under the administration of Boards of Health.)
- (m) Provision is made for the stamping of furniture, the object being to disclose whether it is made by European or Chinese labour.
- (n) Minimum wage provisions are inserted. Premiums to employers are forbidden.
- (o) Sanitation and ventilation must be attended to, and fresh drinking water supplied. Separate and adequate sanitary conveniences for each sex are required.
- (p) Shopkeepers are required to provide proper seating accommodation for female employees. (In some States this is the subject of special legislation.)
- (q) A dressing-room for females must be provided in factories the manufacturing process of which requires a change of dress.
- (r) Adequate protection must be made against fire, and efficient fire-escapes provided.
- (s) Wide powers of regulation are granted to the Executive and heavy penalties imposed, including a penalty by way of compensation to any person injured or the family of any person killed through failure to fence machinery and other dangerous structures.

6. **Registered Factories.**—The number of establishments registered under Factories Acts is shewn below:—

FACTORIES REGISTERED UNDER ACTS, 1911.

State.	No. of Registered Factories.	Numbers Employed.		
		Males.	Females.	Total.
New South Wales ...	4,969	60,960	27,390	88,350
Victoria ...	5,638	52,338	36,356	88,694
Queensland ...	2,301	19,822	8,539	28,361
South Australia ...	1,757	14,105	5,484	19,589
Western Australia*...	949	10,723	2,975	13,698
Tasmania ...	576	5,741	1,320	7,061
Commonwealth ...	16,190	163,689	82,064	245,753

* 1910 figures.

7. **Comparative Statement of Factories Law in Australia and New Zealand.**—The tables which follow shew at a glance the chief provisions of the Factories and Shops Acts in the Commonwealth and in New Zealand:—

A.—EMPLOYMENT IN FACTORIES.—COMPARATIVE VIEW OF

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
<i>Principal Acts</i>	Factories and Shops 1912.	Factories and Shops 1912 " " 1912 (2).	Factories and Shops 1900. " " 1908.
<i>Application of Acts—Limitations</i>	In districts proclaimed Not applicable where all the workers are members of the same family. Not applicable to woolsheds, dairies, or ships. Governor may exempt any factory or class of factory in any district.	In cities, towns and boroughs; also shires to which extended. Not applicable to dairying, agricultural, horticultural, viticultural and pastoral occupations. Not applicable to laundries attached to prisons or religious and charitable institutions.	Only in areas proclaimed. Not applicable to prisons, reformatories, dairies, mines, agricultural buildings, & domestic workshops. Governor may exempt partially or wholly any factory or class of factories in a given district.
<i>Definition of Factory—By Nos. Employed</i>	Four or more.	Four or more.	Two or more (including occupier).
" Asiatics "	One or more Chinese.	One or more Chinese.	One Asiatic.
" Power used "	Steam or mechanical.	Steam or mechanical.	Steam or mechanical.
" Special classes included "	Bakehouses.	Bakehouses, laundries, dye-works, quarries, clay-pits, furniture. Gas and electric light &c., works.	Bakehouses, laundries.
<i>Administration</i>	Minister of Labour.	Minister of Labour.	Secretary for Public Works.
<i>Inspectorate</i>	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination, and enquiry.
<i>Registration</i>	Seven days' prior notice.	Fourteen days' notice after occupation. Annual re-registration.	Seven days' prior notice.
<i>Outwork</i>	Occupier of factory to keep record, shewing places where work done and rates of payment.	Occupier to keep record of description, quantity, remuneration, names and addresses. Out-workers must register in clothing, wearing-apparel, or boot trades.	Sub-contractors' premises subject to factory regulations. Occupier to keep records shewing places, description, and quality of work; nature and amount of remuneration paid. Out-workers must register. Sub-letting forbidden.
<i>Meals in Workroom</i>	Minister may forbid while work is going on; he may require provision of a suitable eating-room.	Forbidden while work going on, unless Chief Inspector permits. Forbidden if dangerous trade conducted.	Minister may forbid meals being taken in factories; he may require provision of suitable eating room.
<i>Sanitary Health and Safety Provisions</i>	Factories to be clean, wholesome, and well ventilated. Over-crowding forbidden. Unhealthy persons under sixteen may be suspended from daily work. Avoidance of infection prescribed. Factories to be thoroughly cleaned once in fourteen months. Bakehouses and furniture factories not to be used as sleeping places. Seats to be provided for females. Proper necessary precautions to be taken against fire, and efficient fire escapes to be provided.	Factories to be clean, wholesome, and well ventilated. Over-crowding forbidden. Factories to be thoroughly cleaned once in fourteen months. Bakehouses to be washed once every six months. Factories and bakehouses not to be used as sleeping places. Wet spinners must be protected. Efficient fire escapes to be provided, and fire appliances kept ready. Doors, &c., to be kept free from obstruction.	Factories to be kept clean, wholesome, and well ventilated. Over-crowding forbidden. Suspension of work by unhealthy persons may be enforced. Avoidance of infection prescribed. Fresh drinking water to be provided. Factories to be thoroughly cleaned once in twelve months. Bakehouses not to be used as sleeping places. Seats to be provided for females. Proper necessary precautions to be taken against fire.
<i>Dangerous Machinery</i>	Must be fenced. Employment of women and boys forbidden.	Must be fenced. Employment of women and boys forbidden. First-aid ambulance-chest to be kept on premises.	Must be fenced.*
<i>Minim'm Wage per week</i>	4s. No premiums or bonus on behalf of apprentices is permitted.	2s 6d. No premium is to be demanded from female apprentices and improvers in clothing trades.	5s. No premium is permitted from apprentices without permission of Inspector.

* See Machinery and Scaffolding Act 1908.

LEADING FEATURES OF ACTS IN FORCE IN AUSTRALIA,* 1913.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.
Factories 1907, 1908, and 1910.	Factories 1904. 1904 (2).	Factories 1910 and 1911.
In places determined by Parliament. Not applicable to domestic servants and agricultural and pastoral pursuits.	In districts proclaimed. Not applicable to mines, dairies, ships, prisons, reformatories, domestic (other than Asiatic) workshops. Governor may exempt any factory.	Whole State. Not applicable to mines, ships, prisons, reformatories, rural industries, charitable institutions. Governor may exempt any factory.
Any one person.	Six or more.	Four or more.
Laundry, dyeworks.	One Asiatic. Steam or mechanical. Bakehouses, laundries.	One Asiatic. Steam or mechanical. Bakehouses, quarries.
Minister of Industry.	Honorary Minister.	Chief Secretary.
Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.
Twenty - one days' prior notice.	Prior notice. Annual re-registration if Asiatics employed	Twenty-one days' prior notice.
Occupier to keep record. Out-workers to register names and addresses.	Occupier to keep record of names and addresses, and quantity and description of work done. Sub-letting forbidden.	Occupier to keep record of names and addresses, and quantity and description of work done.
Minister may forbid meals in factories carrying on noxious trades; he may require provision of suitable eating-room.	Forbidden for women and boys, except with Inspector's written permission.	Forbidden where employees working. In certain factories meal room to be provided.
Factories to be kept wholesome, clean, and well ventilated. Over-crowding forbidden. Factories to be thoroughly cleaned once in fourteen months. Adequate protection to be made against fire.	Factories and connected yards to be clean, wholesome, and well-ventilated. Over-crowding forbidden. Unhealthy persons may be forced to suspend work. Goods, clothing, etc., to be disinfected where necessary. Fresh drinking water to be provided. Thorough cleaning to be regularly done. Bakehouses not to be used as sleeping places. Efficient fire escapes to be provided and other necessary protection to be made against fire.	Factories to be clean, wholesome, and well ventilated. Overcrowding forbidden. Factories may be required to be cleaned once in fourteen months. Factories not to be used as sleeping places. Doors, &c., to be kept clear of obstructions, and fire-prevention appliances kept ready for use.
Must be fenced. Employment of children under sixteen may be forbidden.	Must be fenced.† Inspector may prohibit as dangerous machine.† Employment of females and boys forbidden.	...
4s. No premium is to be paid by female apprentices.	...	4s. No premium in respect to employment is permitted.

* New Zealand.—Owing to consideration of space, information regarding New Zealand has been omitted from this issue. Details up to the end of 1910 will be found in Year Book No. 5, pp. 1051 to 1055. † See Inspection of Machinery Act 1904.

B.—RESTRICTIONS AS TO EMPLOYMENT OF WOMEN

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
* <i>Ordinary Age of Admission to Factory</i>	14	Boys 14 years Girls 15 years	14
<i>Maximum Working Hours of Women and Young Persons</i>			
Per week	Boys under 16 and all females, 48 hours	Boys under 16 and all females, 48 hours	Boys under 16 and all females, 48 hours
„ day	...	Do., 10 hours. Females under 18 or males under 16 as type-setters, 8 hours	...
Maximum hours of continuous labour	Boys under 18 and all females, 5 hours	Boys under 18 and all females, 5 hours.	Do., 5 hours
Interval	Do., $\frac{1}{2}$ hour	Do., $\frac{1}{2}$ hour	Do., $\frac{1}{2}$ hour
<i>Prohibited Hours of Work</i>			
	Boys under 16 and all females 6 p.m. to 6 a.m.	Girls under 16, 6 p.m. to 6 a.m. Males under 16 and all females, after 9 p.m.	Girls under 18, 6 p.m. to 6 a.m. Boys under 16, 6 p.m. to 6 a.m.
<i>Overtime—Limitation—Per day</i>	Three hours	Three hours	Three hours
„ week	Three consecutive days	One day	(Two consecutively)
„ year	Thirty days	Ten days	Fifty-six hrs per week not to be exceeded
Continuous			Forty days
<i>Overtime Pay</i>	Time and a-half	Wage workers, time & a-half Piece workers, additional 3d. per hour	Time and a-half, but not below 6d. per hour
<i>Prohibition of Employment after Childbirth</i>	4 weeks	...	...
<i>Restrictions and Prohibitions of Employment affecting Women and Young Persons in Dangerous Trades</i>			
Type-setting	Persons under 16	Boys under 14; girls under 15	...
Dry grinding and match dipping	Persons under 16†	Persons under 16	...
Manufacture of bricks and tiles	Girls under 18	Girls under 16	...
Making and finishing of salt	Girls under 18	Girls under 16	...
Melting or annealing of glass	Boys under 16; girls under 18	Girls under 18.	...
Silvering of mirrors by mercurial process; manufacture of white lead	Persons under 18	Persons under 18	...
Cleaning of machinery in motion, mill gearing, etc.	All females; boys under 18†	All females; boys under 18	All females; boys under 18
Charge of lift	All females; boys under 16‡	...	All females; boys under 16

* The ages given are those at which admission to factory labour is unrestricted. In some States younger children are admitted if having passed school standards, or by special permit from the Minister or inspector.

AND YOUNG PERSONS IN FACTORIES IN AUSTRALIA.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.
13	14	14
Boys under 16 and all females, 48 hours Do., 10 hours	Boys under 14 and all females 48 hours Do., 8½ hours	Boys under 16 and all females, 48 hours Females, 10 hours
Do., 5 hours	Do., 5 hours	Boys under 18 and all females, 5 hours
Do., ½ hour	Do., ¾ hour	Females & young persons, 1 hour
Females, after 9 p.m.	Females, 6 p.m. to 8 a.m.	Boys under 16 and all females, after 9 p.m.
Boys under 16, after 9 p.m.	Boys under 14, 6 p.m. to 7.45 a.m.	...
...	Three hours	55 hours per week not to be ex- ceeded
Seven hours per week	Two consecutive days	...
100 hours	Thirty days	200 hours (Fruit, jam, etc., factories ex- empted in certain months)
Time and a-quarter	Time and a-quarter	Time and a-quarter
...	4 weeks	...
Boys under 16 and all females not more than 8 hours per day, and not after 6 p.m. or before 6 a.m.	Girls under 15	Boys under 16 and all females not more than 8 hours per day, nor between 9 p.m. and 6 a.m.
Persons under 16	...	Persons under 16
Girls under 16	Girls under 16	Girls under 16
Girls under 16	Girls under 16	Girls under 16
Boys under 14; girls under 18	...	Females under 18
Persons under 18	All females; boys under 18	All females; boys under 18
All females; boys under 18	All females; boys under 18	...
All females; boys under 18	Females under 21; boys under 16	...

† In N.S.W. this restriction applies also to casting from molten lead. ‡ In N.S.W. this restriction applies also to persons in charge of or attending to any engine or boiler
 § In N.S.W. this restriction applies also to any machinery classed as dangerous.

C.—EMPLOYMENT IN SHOPS.—COMPARATIVE VIEW OF LEADING

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
<i>Acts</i>	As for factories Early Closing Act Minimum Wage Act	As for factories	As for factories
<i>Statutory Maximum Hours of Employment.</i>			
(a) Male, adults	...	52 hours per week	53 hours per week
(b) Females and Boys	Girls under 18, boys under 16, 52 hours	52 hours	Females and boys under 16, 52 hours
per week	Girls under 18, boys under 16, 9½ hours (except 1 day, 11½ hours)	9 hours (except 1 day, 12 hours)	Females and boys under 16, 9½ hours (except 1 day, 11½ hours)
per day			
Maximum continuously	All females: 5 hours	All persons: 5 hours	...
Interval	All females: ½ hour	All persons: ½ hour	...
<i>Maximum Overtime</i>			
per day	...	3 hours	3 hours
per year	...	25 days	40 days
<i>General closing time</i>	4 days, 6 p.m.; Fridays, 10 p.m.; Saturdays, 1 p.m.*	4 days, 6 p.m.; Saturdays, 1 p.m.; Fridays, 10 p.m.	4 days, 6 p.m.; 1 day, 9 p.m.; Saturdays (or other prescribed weekly holiday), 1 p.m.
<i>Exemption from closing time</i>	Certain shops	Businesses concerned with tobacco, bicycles, flowers, drugs and edibles, also hair- dressers and pawnbrokers	Certain exempted shops
<i>Seats in Shops</i>	1 to 3 females	1 to 3 assistants	1 to 3 females

* In the Metropolitan and Newcastle districts Saturday is the 1 o'clock closing day; in 56 country shopping districts and in 189 other districts Wednesday is the 1 o'clock and Saturday the 10 o'clock closing day.

8. Mining Acts.—Mining Acts regulate the working of mines. Generally the employment underground of all females and of boys under fourteen years is prohibited. A minimum age, usually seventeen, is fixed for employment as lander or bracman at plats and landing places; no lander, bracman, underground worker, or man in charge of motive power may be employed more than eight hours a day. A large number of scientific provisions for the protection of the lives and health of miners is also inserted in the Acts. Enginedrivers must hold certificates of competency. Persons may be licensed to certify to the condition of boilers. Provision is made to enable injured persons or the relatives of persons killed to recover damages if the injury or death results from a breach of the regulations referred to above. Inspection of mines is fully provided for. Sunday labour is forbidden. In New South Wales and (since 1st February, 1910) Victoria still more advanced mining legislation exists; numerous sections are designed to ensure the well-being of the workers, such as limitation of hours, etc.

9. Employers' Liability and Workmen's Compensation Acts.—In each of the States the main provisions of the British *Employers' Liability Acts* have been enacted. Generally, they apply to all manual workers, though in Victoria miners, as coming under the Mines Acts, are excepted, and in South Australia and Western Australia domestic and menial workers are specifically included. The employers' liability exists in cases of defect of plant, etc., owing to negligence of employer or person in his service. Compensation is not allowed to exceed three years' earnings, and action against the employer is to be commenced within a reasonable time, notice of injury having previously been served. The provisions of the British *Workmen's Compensation Act* 1897 have also been copied in five of the States, Victoria being the exception. This legislation marks a distinct advance upon the Employers' Liability Acts. Its application is generally to

FEATURES OF ACTS IN FORCE IN AUSTRALIA, 1913.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.
Early Closing, 1911	No. 24 of 1902 No. 1 of 1904 No. 52 of 1904 No. 1 of 1912	As for factories Shops Closing 1911
...	56 hours per week	...
Boys and girls under 16, 52 hours	Boys under 16 & all females, 52 hours	Females and boys under 16, 52 hours
Boys and girls under 16, 9 hours (except 11 hours on 1 day)	Boys under 16 & all females, 9 hours (except 10½ hours on 1 day)	Females and boys under 16, 9 hours (except 12 hours on 1 day)
...	One hour interval between noon and 3 p.m. If open after 6.30 p.m., 1 hour for tea	Females and boys under 16, 5 hours
...		Females and boys under 16, ½ hour
3 hours 40 days	3 hours 12 days per half-year	3 hours 40 days
4 days, 6 p.m.; 1 day, 9 p.m.; 1 day, 1 p.m.	4 days, 6 p.m.; 1 day, 9 p.m.; 1 day, 1 p.m. (Opening hour not earlier than 8 a.m.)	4 days, 6 p.m.; 1 day, 10 p.m.; 1 day, 1 p.m.
Certain classes of shops	Shops such as hairdressers, newsagents, tobacconists, and those selling drugs and edibles	Small shops with no paid assistants
...	...	1 to 3 females

manual workers, though restriction is made in South Australia to those receiving less than £5 weekly, and in Tasmania the limit is £3, while miners are exempted from the operation of the Act in New South Wales, being provided for in the *Miners' Accident Relief Act* 1900. The liability of employers covers all cases of injury by accident during employment, and in South Australia it extends also to disablement by industrial diseases. In certain circumstances persons employed casually otherwise than for the purposes of the employer's trade or business are excluded. Misconduct of employee exonerates the employer. Notice of accident is to be sent to the employer without delay, and proceedings for compensation must be begun within a reasonable time. In New South Wales, Queensland, and Western Australia the matter is settled by a police magistrate; in South Australia the Arbitration Court makes the award. The minimum amount of compensation in case of death is three years' earnings, or £200 (except in Tasmania, where the amount is £100, and South Australia, where it is £150), whichever is greater, up to a maximum of £300 in South Australia, £200 in Tasmania, and £400 in the other three States concerned. In case of incapacity the minimum compensation is half wages up to £1 a week in New South Wales, Queensland, and South Australia, up to £1 10s. in Tasmania, and up to £2 in Western Australia; the maximum total payment is £400 in Queensland, £300 in South Australia and Western Australia; and £200 in New South Wales and Tasmania. Agreements made by consent, may, under the authority of an official prescribed in the Act, vary its provisions. A lump sum may be accepted in lieu of weekly compensation, and compensation cannot be assigned. The main difference in the provisions of the two sets of enactments is that under the Liability Acts the employee had to show neglect or defect; under the Compensation Acts the employer has to shew misconduct of worker.

10. **Other Acts.**—Other legislation regulating conditions of labour has been enacted by the States. The British *Conspiracy and Protection of Property Act* (38 and 39 Vic., c. 86) has been adopted. Servants' registry offices are placed under adminis-

trative control, and the rates of commission chargeable are fixed by regulation. Power is given to workmen to attach moneys due to a contractor who employs them in order to satisfy a claim for wages, such wages being made a first charge on moneys due to a contractor. Workmen are given a lien for wages over material whereon they are working, even if it becomes part of other property. This is in addition to the common law lien, which ceases when possession of the property is parted with. Workmen's wages are protected from attachment. In Victoria, provision is made for the compulsory resumption of suburban lands to provide workmen's homes.

11. General Results of Industrial Legislation.—The results of the Legislation described must be sought in the Reports of the Inspectors of Factories of the several States. Generally speaking, the perusal of these reports and of the reports of Royal Commissions which have inquired into the working of the Acts, affords satisfactory evidence that the Acts have, on the whole, effected their objects.

§ 3. Legislative Regulation of Wages and Terms of Contract.

1. General.—Two systems, based upon different principles, exist in Australia for the regulation of wages and general terms of contracts of employment. A "Wages Board" system exists in Victoria and Tasmania, and an Industrial Arbitration Court in Western Australia. In the industrial legislation of New South Wales, Queensland, and South Australia both systems are embodied, Industrial or Wages Boards, as well as Industrial Courts, being instituted. In Victoria, Wages Boards' decisions may be reviewed by the Court of Industrial Appeals. In New South Wales, Industrial Arbitration Acts of 1901 and 1905 instituted an Arbitration Court. This court expired on 30th June, 1908, having delivered its last judgment on the previous day. Wages Boards were substituted under the Industrial Disputes Act 1908, and subsequent years; while the Act of 1912 introduced the mixed system. There is also the Arbitration Court of the Commonwealth, which has power, however, to deal only with matters extending beyond the limits of a single State. New Zealand has an Arbitration Court for regulating wages.

The chief aims of the Wages Board system are to regulate hours, wages, and conditions of labour and employment, by the determination of a Board usually brought into existence for any specified industry or group of industries by petition or application. Under the Industrial Arbitration Court system an industry does not technically come under review until a dispute has actually arisen. Most of the Acts, however, have given the President of the Court power to summon a compulsory conference. The legislation of the two States (Victoria and Tasmania) where the Wages Board system is in vogue, contains no provision against strikes.

2. Wages Boards.—(i.) *Historical.* This system was introduced in Victoria by the Factories and Shops Act of 1896. The original Bill made provision only for the regulation of the wages of women and children, but was afterwards amended in Parliament to extend the system to adult operatives of both sexes.

The Act of 1896 made provision for the regulation of wages only in the clothing and furniture trades and the bread-making and butchering trades. By an Act of 1900 the operations of the Act were extended to include all persons employed either inside or outside a "factory" or "workroom"—see sec. 4, i. (a)—in any trade usually carried on therein. This section is now in the Act of 1912. The Act of 1907 extended the system to trades and businesses not connected in any way with factories, making provision for the appointment of Wages Boards for metropolitan shop employees, carters and drivers, persons employed in connection with buildings or quarrying, or the preparation of fire-

wood for sale or the distribution of wood, coke, or coal. The Act of 1909 extended the system to the mining industry, and those of 1910 extended the operation of the Acts to shires.

The regulation is effected by a Board, called a Special Board, to distinguish it from the Board of Health. Boards for the regulation of wages in the trades specified in the Act of 1896 are appointed as a matter of course, and by the Executive other Boards are appointed only if a resolution for appointment be passed by both Houses of Parliament. Originally the Board was elected in the first instance, but the difficulty of compiling electoral rolls led to the adoption of the system of nomination, which has proved satisfactory. Beneficial results have followed from the institution of the system, conditions of female labour especially being improved. It is also claimed that sweating has been abolished.

The Board fixes the wages and hours of work and may limit the number of "improvers" to be employed (usually by prescribing so many to each journeyman employed). The Board fixes the wages of apprentices and improvers according to age, sex, and experience, and may fix a graduated scale of rates calculated on the same basis. Apprentices bound for less than three years are improvers, unless the Minister sanctions the shorter period of apprenticeship on account of previous experience in the trade. The Minister may sanction the employment of an improver over twenty-one years of age at a rate proportionate to his experience. Outworkers in the clothing trade must be paid piece rates. Manufacturers may, by leave of the Board, fix their own piece rates, if calculated upon the average wages of time workers as fixed by the Board.

Licenses for twelve months to work at a fixed rate lower than the minimum rate may be granted by the Chief Inspector of Factories to persons unable to obtain employment by reason of age, slowness, or infirmity. Licenses are renewable.

Penalties are fixed for the direct or indirect contravention of determinations, the obedience to which is ascertained by examination of the records of wages, etc.

A Court of Appeal has power to review determinations of the Boards.

The Acts fix an absolute weekly minimum wage, and the evasion of this provision (such as had occurred regarding females employed in the clothing trade), by charging an apprenticeship premium, is prevented by the prohibition of all such premiums. Until the Minimum Wage Act of 1908 began to operate, this absolute minimum provision did not exist in New South Wales. The Act of 1912 of this State combines the Wages Board and Arbitration Court systems.

South Australia enacted the Wages Board system in 1900, 1904, and 1906, but the first-mentioned Act was rendered inoperative owing to the disallowance by Parliament of the regulations necessary for carrying it into effect. The Act of 1904 revived the Wages Board system respecting women and children employed in clothing and white-work trades. The action of this statute was paralysed by a decision, the effect of which was to prevent the fixing of a graduated scale of wages as is done by the Victorian Boards. The necessity for some protection to the persons intended to be benefited by these statutes was urged in the annual reports of the Chief Inspector of Factories, but, until 1906, without effect. Many employers, however, voluntarily complied with the Board's determinations, though these were without legal force. The system was brought into full operation by the Act of 1906, which preceded the Victorian Act of 1907, in extending the system to other than factory trades, and was of a wider scope than the Victorian Act.

The system has also been in operation in New South Wales and Queensland, and came into operation in Tasmania during 1911. In Western Australia the object is attained under the Arbitration Court system.

In Queensland, the Wages Boards Acts were repealed in 1912, and replaced by the Industrial Peace Act, which, while embodying the principal provisions of the Wages Boards Acts, contains provisions for the establishment of an Industrial Court for appeals, and also provides against lockouts and strikes. Under this Act all Boards established under the repealed Acts continue in existence, and their determinations are recognised as awards under the new Act.

It is claimed that the introduction of the Wages Board system affording protection from unfair competition to employers, and the assurance of fair wages to employees, has led to improvement in working conditions, and that the appreciation of the workers is evidenced by the number of applications for the granting of Boards.

(ii.) *Mode of Constitution.* The following statement is taken from the Report of the Chief Inspector of Factories, Victoria, for 1911. The other States, in establishing their systems, adopted, in the main, that in vogue in Victoria.

“ Before a Special Board is constituted, it is necessary that a resolution in favour of such a course should be carried in both Houses of the Legislature. It is usual for the Minister administering the Factories Act to move that such a resolution should be passed. He may be induced to adopt such a course by representations made either by employers or employees, or both, or by the reports of the officers of the Department. The reason alleged by employers for desiring a Board is usually unfair competition; those alleged by employees are low wages and the excessive employment of juvenile labour. If the Minister is satisfied that a case has been made out, he moves the necessary resolution in Parliament, and when such resolution has been carried, an Order-in-Council is passed constituting the Board. Once a resolution has been passed or a Board appointed, the Minister, through the Governor-in-Council, has full power to group or divide trades, to adjust the powers of different Boards by taking from one and adding to another, to define the parts of the State over which any determination shall operate, and generally to administer so as to secure the greatest measure of benefit. The Order constituting the Board indicates the number of members. The number of members must not be less than four nor more than ten. The Minister then invites, in the daily press, nominations for the requisite number of representatives of employers and employees. These representatives must be, or have been, employers or employees, as the case may be, actually engaged in the trade to be affected. The full names and addresses of persons willing to act should be sent in with particulars as to their connection with the trade during the three years last past. Where there are associations of employers or employees, more than the necessary number of nominations are often received. In such case, the Minister selects from the persons whose names are sent in, the necessary number to make up a full Board. The names of persons so nominated by the Minister are published in the *Government Gazette*, and unless within twenty-one days, one fifth of the employers, or one-fifth of the employees, as the case may be, forward a notice in writing to the Minister that they object to such nominations, the persons so nominated are appointed members of the Board by the Governor-in-Council. If one-fifth of the employers or employees object to the persons nominated by the Minister—and they must object to all the nominations, and not to individuals—an election is held. The Chief Inspector conducts such elections, the voting is by post, the ballot papers being forwarded to each elector. Within a few days of their appointment, the members are invited to meet in a room at the office of the Chief Inspector of Factories, and a person (always a Government officer, and usually an officer of the Chief Inspector's department) is appointed to act as secretary. The members must nominate a chairman within fourteen days of the date of their appointment, but if they cannot agree to a chairman, he is appointed by the Governor-in-Council. The times of meeting, the mode of carrying on business, and all procedure, are entirely in the hands of the Board, whose powers are defined in the Factories Acts. Vacancies in Special Boards are filled on the nomination of the Minister without any possibility of either employer or employee objecting. The result of the labours of a Board is called a ‘Determination,’ and each item of such determination must be carried

by a majority of the Board. The chairman is a member of the Board. His function is usually confined to conducting the proceedings. He does not exercise his vote except in cases where the Board is equally divided, when his casting vote determines the question at issue. When a determination has been finally made, it must be signed by the chairman, and forwarded to the Minister of Labour. The Board fixes a date on which the determination should come into force, but this date cannot be within thirty days of the last fixing of a price or rate of pay. If the Minister is satisfied that the determination is in form, and can be enforced, it is duly gazetted. In the event of the Minister considering that any determination may cause injury to trade, or injustice in any way whatever, he may suspend same for any period, not exceeding six months, and the Board is then required to re-consider the determination. If the Board does not make any alteration, and is satisfied that the fears are groundless, the suspension may be removed by notice in the *Gazette*. Provision is made by which either employers or employees may appeal to the Court of Industrial Appeals against any determination of a Board. This Court consists of any one of the judges of the Supreme Court, sitting alone, and the judges arrange which of them shall for the time being constitute the Court. An appeal may be lodged (a) by a majority of the representatives of the employers on the Special Board; (b) a majority of the representatives of employees on the Special Board; (c) any employer or group of employers, who employ not less than 25 per cent. of the total number of workers in the trade to be affected; or, (d) 25 per cent. of the workers in any trade. The Court has all the powers of a Special Board, and may alter or amend the determination in any way it thinks fit. The decision of the Court is final, and cannot be altered by the Board, except with the permission of the Court, but the Court may, at any time, review its own decision. The Minister has power to refer any determination of a Board to the Court for its consideration, if he thinks fit, without appeal by either employer or employee. The decision of the Court is gazetted in the same way as the determination of the Board, and comes into force at any date the Court may fix. The determinations of the Board and the Court are enforced by the Factories and Shops Department, and severe penalties are provided for breaches of determinations. No prosecution for any offence against any of the Factories Acts, or for any breach of any determination can be brought except through the Department."

(iii.) *Special Minimum Wage Provisions.* At the end of 1908 the Minimum Wage Act was passed in New South Wales. Its provisions are now incorporated in the Industrial Arbitration Act 1912. A summary of the provisions of the enactment, and a statement of some of the ills it was intended to meet, as set out in the departmental reports, serve as an indication of the general trend of public feeling throughout the Commonwealth in regard to the payment of a satisfactory wage to employees. The Act provided for a weekly wage of not less than four shillings to all persons coming within the definition of "workman" or "shop assistant." That such a measure was necessary was evidenced by the fact that in the workrooms in the Sydney district no less than 514 girls, whose ages ranged from 13 to 21 years, were, at the end of 1908, in receipt of less than four shillings per week, and in the Newcastle district there were 272 girls employed in the dressmaking and millinery workrooms receiving less than four shillings a week, the majority being paid no wages at all for their services. The Act provided that for shop assistants a minimum rate of threepence per hour or portion of an hour was to be paid when overtime was worked at intervals of not more than one month, and a sum of not less than sixpence as tea-money was to be paid on the day the overtime was worked. The payment by employees, or on their behalf, in the clothing and wearing apparel Trades, of a premium or bonus was prohibited. The system of so-called apprenticeship without payment originally carried with it the recognition of an obligation to teach the trade, especially in the dressmaking and millinery industry. This aspect of the case had, to a very great extent, been forgotten in the large workrooms, the training received for some time being more that of general discipline than of a technical character. With a minimum wage of four shillings, an employer would find it worth while to teach the employees, so as to bring in a return for the outlay as speedily as possible, and

discharges of partially-trained workers would be less frequent. The trades would be improved by the weeding out of those who failed to show reasonable aptitude for their work.

3. The Arbitration Court System.—(i.) *Acts in Force.* The following is a general account of the main features of the Compulsory Arbitration laws of Australia. A few important divergencies between the Acts are noted.

The Acts in force in the States at the close of the year 1912 are set out on page 1018 *supra*. In addition, the Commonwealth Statute Book contains the Commonwealth Conciliation and Arbitration Acts 1904-11.

(ii.) *Significance of Acts.* In Victoria in 1891, and in New South Wales in 1892, Acts were passed providing for the appointment of Boards of Conciliation, to which application might be made voluntarily by the contending parties. The awards of the Boards had not any binding force. Boards were applied for on but few occasions, their lack of power to enforce awards rendering them useless for the settlement of disputes.

The first Australian Act whereby one party could be summoned before, and, presumably, made subject as in proceedings of an ordinary court of law to the order of a court, was the South Australian Act of 1894. Its principles have been largely followed in other States, but it proved abortive in operation in its own State, and in many respects was superseded by the Wages Board system. Western Australia passed an Act in 1900, repealed and re-enacted with amendments in 1902 and 1909, the whole being consolidated in the Industrial Arbitration Act of 1912. The Court system was adopted in New South Wales in 1901, and various changes having been subsequently introduced, a consolidation was made in 1912. Queensland introduced the system under the Industrial Peace Act of 1912. The Commonwealth principal Act, passed in 1904, applies only to industrial disputes extending beyond the limits of a single State. In Western Australia a Court of Arbitration is constituted under the presidency of a Judge of the Supreme Court.

(iii.) *Industrial Unions.* The Arbitration Act, framed to encourage a system of collective bargaining, to facilitate applications to the court, and to assure to the worker such benefits as may be derived from organisation, virtually creates the Industrial Union. This, except in New South Wales and Western Australia, has been quite distinct from the trades union; it is not a voluntary association, but rather an organisation necessary for the administration of the law. The New South Wales Act of 1901 required all trade associations to register as "industrial unions," prescribing the separation of industrial and benefit funds, and enforcing strict and proper management, the industrial funds being available in payment of penalties incurred for breaches of the Arbitration Act. Industrial unions (or "organisations" as they are styled in the Commonwealth Act) may be formed by employers or employees. They must be registered, and must file annual returns of membership and funds. Before unions of employers are registered, there must be in their employment a minimum number of employees. In New South Wales and Western Australia the minimum is 50; under the Commonwealth Act, 100. Unions of employees must, in Western Australia, have a membership of 15; by the Commonwealth Act a membership of 100 is required. The union rules must contain provisions for the direction of business, and, in particular, for regulating the method of making applications or agreements authorised by the Acts. In Western Australia rules must be inserted prohibiting the election to the union of men who are not employers or workers in the trade, and the use of union funds for the support of strikes and lockouts; a rule must also be inserted requiring the unions to make use of the Act.

(iv.) *Industrial Agreements.* Employers and employees may settle disputes and conditions of labour by industrial agreements, which are registered and have the force of

awards. They are enforceable against the parties and such other organisations and persons as signify their intention to be bound by an agreement.

(v.) *Powers of Court.* Failing agreement, disputes are settled by reference to the court. In the Commonwealth this consists of a Judge of the High Court. The Court may (and on the application of an original party to the dispute must) appoint two assessors at any stage of the dispute. In the States the president of the tribunal (usually a Judge of the Supreme Court) is assisted by members (the number varying under the various Acts) chosen by and appointed to represent the employers and employees respectively.

Cases are brought before the court either by employers or employees. The consent of a majority of a union voting at a specially summoned meeting is necessary to the institution of a case; the Commonwealth Act requires the certificate of the registrar that it is a proper case for consideration.

The powers of the court are both numerous and varied; it hears and makes awards upon all matters concerning employers and employees. The breadth of its jurisdiction may be gathered from the Commonwealth definition of "industrial matters," viz., "all matters relating to work, pay, wages, reward, hours, privileges, rights, or duties of employers or employees, or the mode, terms, and conditions of employment or non-employment; and in particular, but without limiting the general scope of this definition, the term includes all matters pertaining to the relations of employers and employees, and the employment, preferential employment, dismissal or non-employment of any particular persons, or of persons of any particular sex or age, or being or not being members of any organisation, association, or body; and any claim arising under an industrial agreement; and all questions of what is fair and right in relation to any industrial matter having regard to the interests of persons immediately concerned, and of society as a whole."

The object of the court is to endeavour to prevent and settle industrial disputes; and when they have occurred to reconcile the parties. The court may fix and enforce penalties for breaches of awards, restrain contraventions of the Acts, and exercise all the usual powers of a court of law. The High Court has declared that the power of the Commonwealth Arbitration Court to make a common rule, *i.e.*, an extension of award in a particular case to cover the whole industry affected by the proceedings, is *ultra vires* of the constitution.¹

The Commonwealth court may prescribe a minimum rate of wage; it may also, as regards employment, direct that preference of employment or service shall be given to members of unions. An opportunity is offered for objection to a preference order, and the court must be satisfied that preference is desired by a majority of the persons affected by the award who have interests in common with the applicants.

The Commonwealth Court is to bring about an amicable agreement, if possible to conciliate and not to arbitrate, and such agreement may be made an award. In order to prevent a matter coming into dispute the president of the Commonwealth Arbitration Court may convene a compulsory conference under his own presidency. Attendance of persons summoned to attend is compulsory. Provision is made in the recent Act, whereby, if there is no settlement arrived at in the conference, the president may refer the matter to the court and then arbitrate on it.

There are four ways in which a matter may be brought before the court—

- (a) By the registrar certifying that it is a dispute proper to be dealt with by the court in the public interest.
- (b) By the parties, or one of them, submitting the dispute to the court by plaint in the prescribed manner.
- (c) By a State Industrial Authority, or the Governor-in-Council of a State in which there is no such authority, requesting the court to adjudicate.
- (d) By the president referring to the court a dispute as to which he has held a conference without an agreement being reached.

1. *The King v. The Commonwealth Court ex parte Whybrow.* (2 C.L.R., vol. 2, p. 1.)

All parties represented are bound by the award, and also all parties within the ambit of a common rule. The court possesses full powers for enforcement of awards.

States have included their railway and tramway employees, and also the employees of certain other public bodies under the Acts; the section of the Commonwealth Act giving the Commonwealth Court power over state employees has been declared unconstitutional by the High Court.¹

(vi.) *Repression of Strikes and Lockouts.* The first instance of a strike on a large scale in Australia occurred in 1890 and 1891, when the industrial upheavals assumed far-reaching proportions. As a result of differences between pastoralists and shearers, the labour unions called out the maritime workers. Industry was paralysed by the cessation of the sea-borne coal trade. Communications were held up, and commercial activity suspended. The chief results of the strike were indirect. It was seen that peaceful methods of adjusting disputes were more conducive to the welfare of the community generally, than the suicidal methods of strike and lockout. The unions therefore turned to legislation as an effectual means of improving labour conditions. It was hoped that open hostility to the economic system might be prevented by State regulation. A general desire was shewn for recognition of conciliation and arbitration, voluntary where possible, but compulsory, through national tribunals and under legal authority, where necessary.

Accordingly, industrial legislation aims at preventing strikes and lockouts in relation to industrial disputes, other means of settlement being provided. Such is the declared object of the Commonwealth Acts. It is decreed that no person or organisation shall, on account of any industrial dispute, do anything in the nature of a strike or lockout, or continue any strike or lockout, under a penalty of £1000.

Strikes, however, have not altogether ceased, even in those States where legislation, by stringent enactment, forbids them. It has been noted that strikes of late have occurred chiefly amongst coal miners and certain unions representing unskilled labourers. The prohibiting clauses have not always been enforced by the executive. But in several instances indictment has followed attempts to bring about or to prolong a strike, and fines and imprisonment have been awarded. A decision of the Arbitration Court, ordering the Newcastle coal trimmers to return to work, was upset by the Supreme Court of New South Wales, on the ground that the Arbitration Court had no power to make men work if they did not wish to do so.

Neither Wages Boards nor Arbitration Courts have altogether abolished strikes, but it is believed that, by the provision of a properly-constituted legal tribunal for the settlement of matters in dispute, industrial unrest will be checked.

(vii.) *Miscellaneous.* Protection is afforded to officers and members of unions against dismissal merely on account of such officership or membership, or on account of their being entitled to the benefit of an award.

It has been settled by the High Court that an Arbitration Court cannot direct—

- (a) That non-unionists seeking employment shall, as a condition of obtaining it, agree to join a union within a specified time after engagement;
- (b) That an employer requiring labour shall, *ceteris paribus*, notify the secretary of the employees' union of the labour required.²

4. Comparative Statement of Tribunals for Regulating Wages in Australia and New Zealand.—The table on pages 1038 and 1039 shews at a glance the Acts which operate in fixing wages, the constitution and function of tribunals enacted under them, and the effect and extent of the tribunals' decisions. It will be seen that in all the States there is machinery for the regulation of wages.

1. Federated Amalgamated Railway, etc., Employees v. N.S.W. Railway, etc., Employees. (4 C.L.R. 488).

2. Trolly, etc., Union of Sydney and Suburbs v. Master Carriers' Association of New South Wales. (2 C.L.R. 509.)

5. Movement Towards Uniformity.—The wide difference between the development in the several States of the Commonwealth of the regulation by State institutions of the remuneration and conditions of the workers, has given rise to a desire on the part of the Commonwealth Government to secure uniformity throughout Australia by any suitable and constitutional action on the part of the Commonwealth. The provisions of States wages laws vary considerably. In New South Wales, Victoria, and Western Australia, considerable experience has been gained of their working. The system is newer in South Australia, Queensland, and Tasmania. The desirability of uniformity has, as already mentioned, been recognised by the New South Wales Arbitration Court, which refused the Bootmakers' Union an award which would increase the wages of its members to amounts exceeding those paid in Victoria in the same trade, the express ground of the refusal being that New South Wales manufacturers would be handicapped by the payment of a higher rate of wage than that prevailing in Victoria.

6. Constitution Alteration Proposals.—Two proposed laws for the alteration of the constitutional powers of the Commonwealth in regard to industries and businesses were submitted to the people for acceptance or rejection on the 26th April, 1911. The first law proposed to amend section 51 of the Constitution Act (see pp. 24 and 25 hereinbefore) so as to give the Commonwealth Government increased powers to deal with (a) trade and commerce, (b) corporations, (c) industrial matters, and (d) trusts and monopolies. The second law proposed to insert after section 51 of the Constitution Act, a section empowering the Commonwealth Government to make laws with respect to monopolies. Neither of the proposals was approved by the people. Fuller particulars are given on page 24 of this book. At the general elections, to be held on 31st May, 1913, these and other matters are again to be submitted by referendum. (See Appendix.)

7. The "New Protection."—The opinion has been expressed that a manufacturer who benefits by the Commonwealth protective tariff should charge a reasonable price for the goods which he manufactures, and should institute a fair and reasonable rate of wage and conditions of labour for his workmen.

The above view is known as the "New Protection," a phrase which, though novel, is already firmly established in Australian economic discussions. The outcome has been the enactment of new laws, designed for the benefit of the workers, and for controlling monopolies and trusts which would otherwise exploit the necessities of life.

By the Customs Tariff 1906, increased duties were imposed upon certain classes of agricultural machinery, notably the "stripper-harvester," a machine invented in Australia, which has, to a great extent, replaced the "reaper and binder and thrashing machine" in the harvesting of wheat. By the same Act it was enacted that the machines scheduled should not be sold at a higher cash price than was thereby fixed, and that if that price should be exceeded, the Commonwealth Executive should have power, by reducing the customs duties imposed by the Act, to withdraw the tariff protection.

By the Excise Tariff Act 1906 (No. 16 of 1906), an excise of one-half the duty payable upon imported agricultural machinery was imposed upon similar machinery manufactured in Australia. But it was provided that the latter should be exempt from excise if the manufacturer thereof complied with the following condition, namely, that the goods be manufactured under conditions as to the remuneration of labour, which—

- (a) Are declared by resolution of both Houses of the Commonwealth Parliament to be fair and reasonable ;
- (b) Are in accordance with the terms of an industrial award under the Commonwealth Conciliation and Arbitration Act 1904 ;
- (c) Are in accordance with the terms of an industrial agreement filed under the last-mentioned Act ;
- (d) Are, on an application made for the purpose to the President of the Court, declared to be fair and reasonable by him or by a judge of a State Court or a State industrial authority to whom he may refer the matter.

TRIBUNALS FOR THE REGULATION OF WAGES

Particulars.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
<i>Name of Acts</i>	Industrial Arbitration Act 1912	Factories and Shops Act 1912	Industrial Peace Act 1913
<i>Nature of Tribunals</i>	Court of Industrial Arbitration. Industrial Boards	Court of Industrial Appeals. Wages Boards	Industrial Court. Industrial Boards
<i>How Tribunals are brought into existence</i>	Industrial Court (Judge) constituted by Act. Industrial Boards by the Minister on recommendation of Industrial Court.	Court constituted by Acts. Wages Boards by Governor-in-Council on resolution of Parliament	Industrial Court constituted by the Act. Industrial Boards, by Governor-in-Council on recommendation of Court
<i>Scope of Acts</i>	To industrial groups named in Schedule to Act, and those added by Proclamation. Includes Government servants	To any process, trade, business, or occupation specified in a resolution. Government servants are not included	To callings specified in Schedule to Act, and to those added by Governor-in-Council
<i>How a trade is brought under review</i>	Reference by Court or Minister, or by application to the Board by employers or employees	Usually by petition to Minister	By petitions and representations to Industrial Registrar
<i>President or Chairman of Tribunal</i>	Appointed by Minister on recommendation of Court.	Appointed by Governor-in-Council on nomination of Board, or failing that on nomination by Minister	Any person elected by Board. If none elected, appointment is by the Governor-in-Council on recommendation of Court
<i>No. of members of Tribunal</i>	Chairman, and 2 or 4 other members	Not exceeding 11 (including chairman)	Not less than 5 nor more than 13 (including chairman)
<i>How ordinary members are appointed</i>	Appointed by Minister on recommendation of Industrial Court	Nominated by Minister. But if one-fifth of employers or employees object, representatives are elected by them	By employers and employees respectively
<i>Decisions — how enforced</i>	By Registrar, Industrial Magistrate and Inspectors	By Factories Department in Courts of Petty Sessions	By Inspectors of Factories and Shops, Department of Labour
<i>Duration of decision</i>	For period fixed by Tribunal, but not more than 3 years.	Until altered by Board or Court of Industrial Appeals	12 months and thereafter, until altered by Board or Court
<i>Appeal against decision</i>	To Industrial Court against decision of Boards	To the Court of Industrial Appeals	To Industrial Court
<i>If suspension of decision possible pending appeal</i>	No	Yes; for not more than 12 months	Yes; for not more than 3 months
<i>Can preference to unionists be declared?</i>	Yes	No	No
<i>Provision against strikes and lockouts</i>	Strikes, penalty £50 and preference to unionists cancelled. Lockouts, penalty £1000.	None	Strikes £50, lockouts £1000, unless notice of intention given to Registrar and secret ballot taken in favor. In the case of public utilities, compulsory conference also must have proved abortive
<i>Special provisions for Conciliation</i>	Special Commissioner. 3 Conciliation Committees for colliery districts. Registered agreements	None	Compulsory Conference. Registered Agreements

IN TRADES IN AUSTRALIA,* 1913.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.	COMMONWEALTH.
The Factories Acts 1907, 1908, and 1910. Industrial Arbitration Act 1912	Industrial Arbitration Act 1912	Wages Boards Acts 1910 and 1911	Conciliation and Arbitration Act 1904-11.
Industrial Court. Wages Boards	Arbitration Court	Unlimited	Court of Conciliation and Arbitration.
Court constituted by Act of 1912. Wages Boards by the Governor-in-Council	Constituted by the Act	For the clothing trade, by the Act; for other trades, by a resolution of Parliament	Court constituted by the Act
To processes, trades, &c., specified in Act, and such others as may be authorised by Parliament	All industrial occupations	All trades, or groups or parts thereof	Industrial disputes extending beyond limits of any one State or in Federal Capital or Northern Territories
Court—matters or disputes submitted by Minister, Registrar, employers or employees, or by report of Wages Board. Wages Boards by petitions, &c.	Industrial disputes referred by President or by an Industrial Union or Association	By application of parties	Industrial disputes either certified by Registrar, submitted by organisation, referred by a State Industrial authority or by President after holding abortive Compulsory Conference
Court—President. Wages Board, appointed by Governor on nomination of Board, or failing nomination a Stipendiary Magistrate	A Judge of the Supreme Court	Any person elected by the Board. If none elected, appointment by the Governor-in-Council	President
Court, President only. Wages Board, not less than 5 nor more than 11 (inclusive of chairman)	Three, including president	Chairman, and not less than four nor more than ten	President only
By Governor on nomination of employers and employees respectively	Appointed by Governor, President directly, and one each on recommendation of unions of employers and workers respectively	By Governor-in-Council on nomination by employers and employees	President appointed by Governor-General from Justices of High Court
By Factories Department	By Arbitration Court on complaint of any party to the award or Registrar or an Industrial Inspector	By Factories Department	By proceedings instituted by Registrar, or by any organisation affected, or a member thereof
Until altered by Board or by order of Industrial Court	For period fixed by Court, not exceeding 3 years, or for 1 year and thenceforward from year to year until 30 days' notice given	Until altered by Board.	For period fixed by award not exceeding 5 years
Industrial Court	No appeal except against imprisonment or a fine exceeding £20	To Supreme Court	No appeal. Case may be stated by President for opinion of High Court
Yes	No suspension. Court has power to revise an award after the expiration of 12 months from its date	Yes	No appeal
No	No	No	Yes; ordinarily optional, but mandatory if in opinion of Court preference is necessary for maintenance of industrial peace or welfare of society
Penalty £500, or imprisonment 3 months	Employer or Industrial Union, £100; other cases, £10.	None	Penalty, £1000.
Compulsory Conference. Industrial Court. Registered agreements	Compulsory Conference. Registered agreements.	None	Compulsory Conference. Court may temporarily refer to Conciliation Committee, Registered agreements

* New Zealand.—Owing to considerations of space, information regarding New Zealand has been omitted from this issue. Details up to the end of 1910 will be found in Year Book No. 5, p. 1065.

By the Excise Tariff Act 1906 (No. 20 of 1906), excise duties are imposed in respect of spirits, and it is provided that if any distiller (i.) does not, after the Act has been passed a year, pay his employees a fair and reasonable rate of wages per week of forty-eight hours or (ii.) employs more than a due proportion of boys to men engaged in the industry, the Executive may on the advice of Parliament impose an additional duty of one shilling per gallon on spirits distilled by that distiller.

Exemptions have been claimed by the manufacturers of agricultural machinery in South Australia, New South Wales, Victoria, and Tasmania. These were granted in the two first-mentioned States in consequence of an agreement entered into between the employers and employees. In Victoria, "this whole controversial problem with its grave social and economic bearings" (to quote the words of the President of the Court) was discussed in a lengthy case upon the application for exemption by Victorian manufacturers, now widely known as the "Harvester Case," and in the report of that case may be found the legal interpretation of the Acts under consideration. The exemptions claimed were refused, and the court after discussing the meaning of the words "fair and reasonable" defined them by laying down what it considered to be a scale of fair and reasonable wages.

The High Court has pronounced that the legislation under these Excise Acts is unconstitutional as being an extension of Federal action beyond the powers granted, and a usurpation of the ground reserved to the States. It may be noted that the rejected measures were enacted with the consent of all parties in Parliament, having been placed upon the Statute Book whilst the Liberal party was in power, the Labour representatives strongly supporting the proposals.

8. **Bounties.**—The Bounties Act 1907, the Manufactures Encouragement Act 1908, and the Shale Oil Bounties Act 1910 make provision for the encouragement of certain Australian industries by the payment to producers of certain moneys allotted by the Act upon the production of the commodities specified. The Acts also provide for the refusal or reduction of a bounty, if the production of a commodity is not accompanied by the payment to the workers employed in that production of a fair and reasonable rate of wage. The amounts paid in bounties during 1911-12 were:—

COMMONWEALTH BOUNTIES PAID (EXCLUDING SUGAR), 1911-12.

Cotton.	Flax and Hemp.	Sisal Hemp.	Preserved Fish.	Tobacco Leaf.	Cotton Seed for Manufacture of Oil.	Coffee, Raw.	Fruits, Dried.	Combed Wool or Tops Exported.	Iron Manufactures etc.*	Wire Netting.*	Kerosene.†	Refined Paraffin Wax.†	Total.
£ 137	£ 480	£ 18	£ 168	£ 78	£ ...	£ 68	£ 1,734	£ 16,898	£ 17,079	£ 5,968	£ 2,629	£ 739	£ 45,996

* Paid under the Manufactures Encouragement Act 1908.

† Paid under the Shale Oil Bounties Act 1910.

The provision of bounties for sugar-growers is dealt with on page 394 *supra*. The present operative Act is the Sugar Bounty Act 1910, in the terms of which the grower receives bounty according to his production of sugar-cane and beet grown by white labour. The bounties and expenses for the last eight years were:—

SUGAR BOUNTIES EXPENSES, 1904-5 to 1911-12.

Year.	1904-5.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£	£	£	£
Bounties ...	121,408	148,106	328,210	577,148	477,090	402,132	630,762	543,503†
Expenses ...	6,770	6,603	7,706	7,474	6,616	5,645	6,862	‡
Total ...	128,178	154,709	335,916	584,622	483,706	407,777	637,624	‡

* Including sugar beet, £554.

† Including sugar beet, £2244.

‡ Not available.

§ 4. Operation of the Wage-regulating Laws.

1. Awards and Determinations of Industrial and Wages Boards.—The grounds usually alleged by the employers in seeking awards or determinations are that their business is hampered by “unfair” competitors, who pay only a sweating wage; employees allege that they are sweated, or are entitled to an increase in their wages by reason of the prosperity of the trade in which they are engaged, or increase in the cost of living.

In New South Wales there were in December, 1912, 157 Industrial Boards in existence. Awards of Boards and of the Court numbered 339, of which 90 were awards of Industrial Boards varying previous awards, 53 were awards of the Court varying previous awards, and the remaining 196 were original awards of the Court and Boards.

In Victoria there were in June, 1912, 111 Wages Boards affecting 130,000 employees. 90 determinations of Boards were in force. Since the date named the remaining Boards, with the exception of two, have met for the purpose of fixing wages, hours, etc.

The Court of Appeal in Victoria has heard nine Appeals from determinations of Wages Boards. In one case the decision was upheld; in seven cases decisions were reversed or amended; in one case the Board, unable to come to a determination, referred the matter to the Court, which exercised its power of fixing a proper wage where the average wage paid by employers did not afford a living wage. The Court also heard an appeal for a modification of its determination with respect to a trade, and decided to modify such determination by reducing the working hours and increasing the wages in certain cases.

The number of Wages Boards appointed in Queensland since the Acts came into force was, in June, 1912, 71. The employees affected numbered upwards of 30,000. In 65 cases determinations were in force. Under the Industrial Peace Act, 1912, all Boards established continue in existence, and their determinations are recognised. On 31st March, 1913, 75 Industrial Boards were in existence, and several others were in process of formation. In South Australia there were, at the end of 1912, 56 trades under Boards, with about 25,000 employees. Forty-nine determinations were in force. The Wages Board system was inaugurated in Tasmania in 1911. Up to 30th June, 1912, resolutions authorising the appointment of 19 Boards were carried in Parliament, and 11 Boards had made determinations. Four other Boards had commenced work, but had not issued their determinations.

It is stated that the determinations are well observed, and prosecutions for breaches are few, misunderstandings being usually responsible. Where there is no evident intention to evade the determination, rectification can be made on the inspector calling attention to the breach, and the employers usually comply at once with the inspector's requirements. Further action is then deemed unnecessary.

2. Effect of Acts.—The question whether the operation of the Acts has bettered the monetary position of the operative may be answered in the affirmative. Starting from the lowest point, the provision of an absolute minimum wage per week has stopped one form of gross sweating. Another case is that of the “white-workers” and dressmakers; with these the lowest grade was the “outworkers,” who were pieceworkers. In some branches of the Victorian trade, in 1897, the wages paid to outworkers for all classes of certain goods were only from one-third to one-half the wages paid in the factories for low-class production of the same line of stuff. By working very long hours the outworker could earn ten shillings per week. The average wage of females in the clothing trade in 1897 was ten shillings and tenpence per week; there were, however, in that year 4164 females receiving less than one pound per week, and their average was eight shillings and eightpence. It was almost a revolution when a minimum wage of sixteen shillings per week of forty-eight hours was fixed by the Board, when pieceworkers' rates were fixed to ensure a similar minimum, and when outworkers were placed on the level of pieceworkers. Many employers refused to continue to give outwork and took the workers into the factories on time work. The sanitary conditions

required were far more healthy than could exist in the poorer class of dwellings. The evidence of reports from other States discloses similar facts.

3. **Change of Rate of Wage.**—The following table shews the change of affairs in Victoria in these trades:—

VICTORIA.—WAGES OF FEMALES IN CLOTHING TRADES, 1897 to 1911.

Year.	Class.	Females Employed in the Dress, Mantle, and Under-clothing Trade.		Females Employed in the Shirt Trade.	
		Number.	Average Wage.	Number.	Average Wage.
1897	16 yrs. and over receiving under £1 per wk.	4,164	£ s. d. 0 8 8	435	£ s. d. 0 12 3
	„ „ £1 and over ...	593	1 9 1	144	1 3 10

	Females Employed in ...	Dress and Mantle Trade.		Shirt Trade.		Underclothing Trade	
		Number.	Average Wage.	Number.	Average Wage.	Number.	Average Wage.
1911	Females at minimum wage and over ...	3,490	s. d. 25 11	318	s. d. 23 8	826	s. d. 23 8
	Pieceworkers ...	73	20 10	883	21 2	185	19 9

The above trades, the sweating in which has been world-wide, are taken as examples, and corresponding results may be obtained in any State, according as there has or has not been a regulative law. In Tasmania, where no such law was in operation till 1911, the scale of wages may be gathered from the fact that in clothing factories females of three to five years' service, and of twenty to twenty-six years of age, received twelve shillings per week.

§ 5. Operation of the Arbitration Acts.

1. **New South Wales and Western Australia.**—In New South Wales eighty-six agreements were registered under the Industrial Arbitration Act 1901, and two under the Industrial Disputes Act 1908. These affected 1157 employers and nearly 38,000 employees. In Western Australia forty-two agreements were filed up to the end of 1908; twelve in 1909, thirteen in 1910 and twenty-three in 1911, making a total of ninety. The courts have been kept extremely busy. In New South Wales, up to the end of 1908, 252 industrial disputes were filed, 130 awards were made, and the balance of the disputes were settled, withdrawn, or, for some other reason, removed from the list. Fifteen industrial agreements were made "common rules," but these are ineffective in consequence of a legal decision. Fifty-five awards have been made "common rules." There have also been 648 summonses for breaches of awards. In Western Australia 319 industrial cases were, up to the end of 1911, determined; and ninety industrial agreements were made and filed. In 1912, twenty-one industrial cases were determined, making the total up to 340, and 37 industrial agreements were filed, the total on 31st December, 1912, being 127. The Industrial Disputes Act of New South Wales proved far more speedy in its remedial effects than did the Arbitration Acts. During recent years the industrial relations in several important industries have been regulated by Industrial Agreements, thus avoiding the necessity of having recourse to the Court of Arbitration.

§ 6. Other Commonwealth Legislation affecting Labour.

1. **Constitutional Power.**—By sec. 51 of the Commonwealth of Australia Constitution Act, power is conferred upon the Parliament of the Commonwealth to make laws respecting, *inter alia*—

- (xix.) Naturalisation and aliens.
- (xxiii.) Invalid and old-age pensions.
- (xxvii.) Immigration and emigration.
- (xxxv.) Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State.

2. **Legislation.**—(i.) *Old-age Pensions Act.* A special appropriation was made by Parliament (Act No. 18 of 1908), whereby an Invalid and Old-age Pensions Fund was created; the payment of pensions was enacted by another statute (No. 17 of 1908) as from the 1st July, 1909, on which date the system of old-age pensions to persons of 65 years and upwards became established throughout the Commonwealth. The same Act provides for the payment of invalid pensions, operating from a date to be proclaimed; also for the age qualification for women being fixed at 60 by proclamation. In each case the proclamations were made in November, 1910. (See section, Miscellaneous § 3)

(ii.) One of the first Acts of the Commonwealth was the *Pacific Island Labourers' Act 1901*, which prohibited the importation of further Kanaka labour for sugar plantations and provided for the deportation of those already in the Commonwealth.

(iii.) *The Immigration Restriction Acts 1901, 1905, and 1910* prohibit the immigration of any persons who are unable to comply with certain educational conditions. The purpose of this Act is to exclude Asiatic and other coloured peoples from Australia.

(iv.) *The Contract Immigrants Act 1905* defines a contract immigrant as an immigrant to Australia under a contract or agreement to perform manual labour in Australia. The contract must be in writing and must be made by or on behalf of a resident in Australia. Its terms must be approved by the Minister of External Affairs before the admission of the immigrant. It must not be made in contemplation of, or with a view of affecting an industrial dispute. The Minister must be satisfied that there exists a difficulty of obtaining a worker of equal skill and ability in the Commonwealth, but this last provision does not apply to contract immigrants who are British subjects either born in the United Kingdom or descended from persons there born. The terms of the contract must offer to the immigrant advantages equal to those of local workers. Domestic servants and personal attendants accompanying their employers to Australia are excluded from the operation of the Act. Contract immigrants not complying with the above conditions are excluded from Australia.

During the year 1907, 972 contract immigrants were admitted into the Commonwealth, of whom 731 were British, 107 were Spaniards, 80 Scandinavians, 41 Austrians, and 13 Germans. In 1908, 22 contract immigrants were admitted, of whom 20 were British and 2 German. The Britishers followed various occupations; the two Germans were piano makers. In 1909, 158 contract immigrants were admitted, of whom 152 were British. Their occupations were—47 agricultural labourers, 36 bottle makers, 37 station hands, and 32 various. In 1910, 39 contract immigrants were admitted, of whom 38 were British and one French. The occupations were various, the greatest number in any one being eight puddlers (iron trade). In 1911, 352 contract immigrants were admitted, of whom 332 were British, and 17 German. Of the total, 181 were labourers in the sugar industry; 36 were shirt machinists; 20 were cabinet makers; and 19 were jewellery mounters. No contracts were disapproved, and no contract immigrants were refused admission during 1907, 1908, 1909, 1910, or 1911.

(v.) *The Sugar Bounty Act 1910* and the *Bounties Act 1907* make the payment of the bounty contingent on the goods having been grown or produced by white labour.

(vi.) Part VII. of the *Trade Marks Act 1905*, providing for the registration of marks by any individual Australian worker or association of Australian workers for the purpose of informing the consumer whether the articles to which it is applied were manufactured by union or free labour—an adaptation of the American "union label"—has been held by the High Court to be constitutionally *ultra vires*.¹ The Court made an order forbidding the Registrar to keep a workers' register.

1. Attorney-General of New South Wales v. Brewery Employees Union (6 C.L.R. 469).

SECTION XXVIII.

DEFENCE.

§ 1. Military Defence.

1. **Historical Outline.**—Prior to 1870, the main defence of Australia was entrusted to small garrisons of British troops quartered in the leading cities. The primary purpose of these bodies of troops was to serve as a convict guard. From time to time, rumours of wars and of attacks upon Australia deemed imminent as a result of European entanglements, caused the raising of local companies and batteries, which were generally disbanded upon the cessation of hostilities or the quietening of the rumours. The first of such bodies was the "Loyal Association" formed in 1801 as a volunteer corps, on account of the Napoleonic wars, and at the express invitation of the Governor. Half a century later, and at other later dates, fear of Russian aggression drove the colonists to measures of self-defence. Efforts to permanently establish a defence force, however, failed until 1870. In that year, the withdrawal of the last Imperial regiment from Australia, and the sense of insecurity which the Continental wars had engendered, resulted in a definite basis for colonial defence being settled. Small detachments of permanent soldiery were established to act generally as a nucleus about which the citizen soldiery should be shaped, and, generally, to look after the forts and defence works, which had then begun to be erected. The system rested upon a volunteer basis, training and service being freely and enthusiastically given by the citizens, the Governments supplying arms and accoutrements and sometimes uniforms. Reward for five years' service frequently took the shape of grants of land. About 1880, Imperial experts advised the substitution of the purely volunteer system by a "militia" or partially-paid system. The provision of a small annual allowance, generally £10 or £12 per annum for the gunner or private, with a sliding scale for higher ranks, together with arms, accoutrements, ammunition, and all military necessities free, enabled the "militia" system to be introduced about 1883-4. The expenditure was thereby increased, but it was held that the efficiency was enormously greater. With reductions in the rates of pay the system has remained to the present day. "Volunteer" corps have again been raised, and the "permanent" forces from time to time augmented. A detailed historical account of the Australian defence forces prior to federation will be found in the Commonwealth Year Book, No. 2, pp. 1075-1080.

The establishment and strength of the military forces of the several States on 31st December, 1900, immediately prior to federation, was as follows, cadets, reservists, and rifle club members being excluded :—

ESTABLISHMENT AND STRENGTH OF MILITARY FORCES OF STATES,

31st December, 1900.

State.	Establishment.		Strength.	
	Officers.	Other Ranks.	Officers.	Other Ranks.
New South Wales ...	549	9,295	505	8,883
Victoria ...	394	6,050	301	6,034
Queensland ...	310	5,035	291	3,737
South Australia ...	141	2,847	135	2,797
Western Australia ...	140	2,553	135	2,561
Tasmania ...	131	2,605	113	1,911
Commonwealth ...	1,665	28,385	1,480	25,873

The strength of the various arms is shewn in the following table, permanent being distinguished from "militia," or partially-paid, and "volunteers":—

STRENGTH OF THE VARIOUS ARMS, 31st DECEMBER, 1900.

Arms.	N.S.W.		Victoria.		Q'land.		S. Aust.		W. Aust.		Tas.		Total.	
	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.
Permanent—														
Staff ...	19	98	14	53	15	57	14	5	2	8	3	9	67	235
Field and Garrison Artillery...	18	429	12	272	7	214	1	23	2	31	—	15	40	984
Engineers and other units ...	5	70	1	32	—	—	—	—	2	2	—	—	8	104
Militia and Volunteer—														
Cavalry and Mounted Rifles ...	88	1,695	52	1,033	53	741	33	621	32	799	5	91	263	4,980
Field Artillery ...	10	121	14	277	13	138	4	101	12	174	—	—	53	811
Garrison Artillery ...	27	441	37	901	17	212	9	165	2	66	13	197	105	1,982
Infantry ...	242	5,382	136	3,193	145	2,189	58	1,786	71	1,451	83	1,549	735	15,550
Engineers and other units ...	96	597	35	268	41	186	16	96	12	30	9	50	209	1,227
	505	8,833	301	6,034	291	3,737	135	2,797	135	2,561	113	1,911	1,480	25,873

2. Land Defence of Federated Australia.—(i.) *Assumption of Control by Commonwealth.* The Commonwealth of Australia Constitution Act of 1900 empowered the Commonwealth to legislate with respect to "the naval and military defence of the Commonwealth and of the Several States, and the control of the forces to execute and "maintain the laws of the Commonwealth," and vested the command-in-chief of the Commonwealth forces in the Governor-General, authorising him to proclaim a date, after the establishment of the Commonwealth, for the transfer of the Defence Department from each State. This transfer was effected in March, 1901, when the Ministry for Defence, one of the seven departments of the Executive Council of the federation, took over the control of the whole of the forces of the States.

(ii.) *The System of Administration.* Up to 12th January, 1905, the administration of the Commonwealth military forces was by means of a general officer commanding and a headquarters staff. On the date named, a Council of Defence, to deal with questions of policy, and a Military Board, to supervise the administration of the forces, were constituted. Towards the close of the year 1911 the Council of Defence was enlarged by the addition of two members. The main objects aimed at were (a) to establish continuity in defence policy; (b) to maintain a continuous connection between parliamentary responsibility and the control and development of the defence forces, the Minister being in constant and effective touch with his department; (c) to establish continuity of administrative methods by the creation of a continuous board; (d) the separation of administration from executive command, so as to develop the independence of district commands, and by giving scope to independent thought and initiative, make practicable a larger measure of decentralisation, and, more particularly, to make possible the ultimate development of a citizen force; (e) to maintain, on a uniform basis, the efficiency of the forces, by continuous and searching inspection by, and independent report from, an officer who, as Inspector-General, is appointed to report upon the results of the administration of the forces, the efficiency of the troops, the system of training, the equipment, the preparedness for war, and the state and condition of all defence works.

The military system of the Commonwealth is made up of—

(a) Permanent Forces which include

Administrative and Instructional Staff.

The Royal Australian Garrison Artillery Regiment.

The Royal Australian Field Artillery.

The Royal Australian Engineers.

Small detachments of—

Australian Army Service Corps.

Australian Army Medical Corps.

Australian Army Veterinary Corps.

Australian Army Ordnance Corps.

(b) Citizen Forces, comprising

Citizen Forces of all arms.

Reserve Forces.

The Royal Australian Garrison Artillery Regiment provides the garrison, with the militia garrison artillery as reliefs, for certain naval strategic positions and other defended ports, and maintains the forts, guns, stores, and equipment in connection therewith. The other permanent detachments are to form a nucleus, each in its own arm, for instruction and administration of the citizen forces.

The forces of the Commonwealth are organised into—

(a) Field Force.

(b) Garrison Troops.

The field force consists of six Light Horse brigades, five field artillery brigades and five unallotted field batteries, eight infantry brigades, and fifteen unallotted infantry battalions. Its duties are to undertake the defence of the Commonwealth as a whole. The garrison troops find the necessary garrisons for the defended ports.

The reserves consist of (a) officers who, having passed through a certain period or course of training, have retired from active service, and (b) members of rifle clubs, attested under the Defence Acts. Rifle club members are required each year to fire a prescribed musketry course, a capitation allowance being paid to clubs for each member classed as efficient. Rifle clubs would furnish a means of bringing the active forces up to war strength in time of national emergency.

The Commonwealth is divided with Districts, the boundaries of which are nearly identical with those of the States.

(iii.) *Strength of Military Forces under the Federation.* The position of the military forces under the Commonwealth is shewn in the following table :—

STRENGTH OF MILITARY FORCES, 1901 to 1912.

State.	1901. *1/3/01.	1907. 30/6/07.	1908. 30/6/08.	1909. 30/6/09.	1910. 30/6/10.	1911. 30/6/11.	1912. 30/6/12.
Headquarters ...		21	26	30	37	† 141	†140
New South Wales ...	9,772	7,501	7,665	7,902	7,899	8,206	8,163
Victoria ...	7,011	6,235	6,568	6,669	6,876	6,905	6,896
Queensland ...	4,310	2,979	3,176	3,224	3,202	3,371	3,357
South Australia ...	2,956	1,888	1,935	2,004	2,019	1,990	1,869
Western Australia ...	2,283	1,625	1,611	1,662	1,608	1,600	1,451
Tasmania ...	2,554	1,662	1,650	1,870	1,868	1,986	1,820
Total ...	28,886	21,911	22,631	23,361	23,509	24,199	23,696

* Date of Commonwealth taking over the military forces from States. † Including cadets at Royal Military College of Australia, Duntroon.

(iv.) *Strength of the Various Arms.* The numbers of the different arms of the service on the 30th June, 1912, were as follows:—

ARMS OF THE COMMONWEALTH DEFENCE, 1912.

Militia Staff ...	47	Army Service Corps	585	Area Officers ...	213
Light Horse ...	5,613	Army Medical Corps	900	Administrative and	
Field Artillery ...	1,626	Automobile Corps...	26	Instructional Staff	666
Garrison Artillery ...	1,954	Army Nurs'g Service	95	Pay Department,	
Engineers ...	1,206	Army Vet'ny. Corps	20	Rifle Ranges, Rifle	
Infantry ...	10,143	Ordnance Departm't		Clubs, Officers, etc.	77
Intelligence Corps	71	(including Arma-	186	Royal Military College	25
Corps of Signallers	243	ment Artificers) ...			
				Grand Total ...	23,696

(v.) *Classification of Land Forces.* The following table shews the classification and strength of the land forces in each State, including rifle clubs and cadets, on the 30th June, 1912:—

CLASSIFICATION OF LAND FORCES, 1912.

Branch of Service.	Central Adm's't'n.	New South Wales.	Victoria.	Q'land.	South Aust.	West'n Aust.	Tas.	Total.
Permanently employed ...	135*	737	645	293	134	181	110	2,235
Citizen Soldiers...	5	7,316	6,154	3,027	1,693	1,245	1,687	21,127
Volunteers ...	—	37	34	9	20	10	11	121
Area Officers ...	—	73	63	28	22	15	12	213
Rifle Clubs ...	—	12,580	17,026	9,437	5,421	4,510	1,647	50,621
Senior Cadets ...	—	34,327	29,424	12,025	9,191	3,997	3,313	92,277
Unattached List of Officers	—	70	103	36	33	24	22	288
Reserve of Officers ...	—	257	316	220	93	65	51	1,002
Chaplains ...	—	44	49	29	10	22	10	164
Grand total ...	140	55,441	53,814	25,104	16,617	10,069	6,863	168,048

* Including cadets at Royal Military College of Australia, Duntroon.

3. *Instruction and Exchange of Officers.*—The former practice of obtaining officers and non-commissioned officers of the Imperial Army to act as instructors for the Australian military forces has been discontinued for some considerable time; but in August, 1905, arrangements were made for the mutual exchange of permanent officers between the

Commonwealth and England, India, Canada, and New Zealand, three officers having been exchanged each year since 1906. At the same time the practice which has existed for some years of sending officers and non-commissioned officers to England for instruction has been continued. In 1911 two officers and four non-commissioned officers, and in 1912 two officers and two non-commissioned officers of the permanent forces, were sent. In addition, four officers of the militia forces were sent to India for instruction in 1908, four in 1909, five in 1910, five in 1911, and five in 1912.

§ 2. Naval Defence.

1. Historical Outline.—Prior to 1890, when arrangements were made with the British Government for the maintenance of an Australian squadron, provision for naval defence had been instituted in New South Wales, Victoria, Queensland, and South Australia, where gunboats, torpedo boats, or small cruisers were commissioned, and naval volunteers raised. A fuller historical account of the Australian naval forces under the States is given in the Commonwealth Year Book, No. 2, pp. 1084, 1085.

2. The Naval Agreement with the British Government.—(i.) *The Original Compact.* The naval defence of Australasia and its trade was entrusted primarily to ships of the Imperial Navy, maintained under an agreement entered into between the British Government and the Governments of the Commonwealth and New Zealand, and at their joint charge. This agreement was embodied in Acts passed by the several Legislatures some ten years prior to Australian federation. According to its terms, a naval force, additional to the vessels of the Australian Naval Station, which were to be maintained at their normal strength, was to act as an auxiliary squadron. It consisted of five fast third-class cruisers and two torpedo gunboats, and its special function was the protection of the floating trade in Australasian waters. The agreement was made for ten years, and was then, or at the end of any subsequent year, to be terminable only upon two years' notice being given. On its termination, the vessels were to remain the property of the Imperial Government. Three cruisers and one gunboat were to be kept continuously in commission, and the remainder in reserve in Australasian ports, but ready for commission whenever occasion might arise. The vessels were to remain within the limits of the Australasian station, and were to be employed, in times of peace or war, within such limits, in the same way as the Sovereign's ships of war, or employed beyond those limits only with the consent of the Colonial Governments.¹ The first cost of the vessels was paid out of Imperial funds, but the Colonial Governments paid interest on the prime cost at 5 per cent. (up to a maximum of £35,000 per annum), and a sum not exceeding £91,000 for annual maintenance of the vessels, or a total annual contribution of £126,000. In times of emergency or actual war, the cost of commissioning and maintaining the three vessels kept in reserve during peace, was to be borne by the Imperial Government, and, in every respect, the vessels were on the same status as the ships of war of the Sovereign, whether in commission or not. The officers and men of those in commission were subject to a triennial change. The tenth annual contribution, which was payable in advance on 1st March, 1900, apportioned on a population basis, was as follows:—New South Wales, £37,973; Victoria, £32,749; New Zealand, £21,304; Queensland, £13,585; South Australia, £10,439; Western Australia, £4816; Tasmania, £4776.

1. The boundaries of the Australasian station were thus defined:—North—On the north from the meridian of 95° east, by the parallel of the 10th degree of south latitude to 130° east longitude; thence northward on that meridian to the parallel of 2° north latitude; and thence on that parallel to the meridian of 136° east longitude; thence north to 12° north latitude and along that parallel to 160° west longitude. West—On the west by the meridian of 95° east longitude. South—On the south by the Antarctic circle. East—On the east by the meridian of 160° of west longitude.

Nothing in the agreement was to affect the purely local naval forces which had been, or might be, established in the colonies for harbour and coast defence. Such local forces were to continue to be paid for entirely by the colony, and to be solely under its control.

Under the new naval agreement, the boundaries of the Australian station will be considerably altered. (See page 1069).

(ii.) *The Agreement of 1903.* The agreement was not dissolved by the union of six of the contracting colonies, but its renewal, with some alterations, was embodied in the Naval Agreement Act of 1903, the Parliament of New Zealand also assenting. It provided that the force should be made up of one first-class armoured cruiser, two second-class cruisers, four third-class cruisers, four sloops, and a Royal Naval Reserve of 25 officers and 700 seamen and stokers. One of the ships was to be kept in reserve, three to be partly manned for drill purposes for training the Royal Naval Reserve, and the remainder to be kept in commission and fully manned. Australians were, as far as possible, to man the three drill ships and one other vessel, but the vessels were to be officered by Royal Navy and R.N. Reserve officers. Eight nominations for cadet-ships were to be given annually in the Commonwealth and two in New Zealand. One-half of the annual cost of maintenance was to be borne by the colonies—five-sixths of the half (but not exceeding £200,000) by Australia, and one-sixth (but not exceeding £40,000) by New Zealand. The agreement, like the earlier one, was for ten years. By a subsequent arrangement the strength of the squadron was established at one first-class armoured cruiser, three second-class cruisers, and five third-class cruisers. Three sloops were recalled as having no war value, but usually one has been attached to the station as a survey vessel.

3. The Naval Defence of Federated Australia.—(i.) *Assumption of Control by Commonwealth.* One of the reasons most frequently urged in favour of a federated Australia was the need for adequate defence. Accordingly, since the consummation of federation, the Commonwealth has assumed control of every branch of defence. Land defences have been unified and systematised, and it has been said that Australia is now ready to take full responsibility for the defence of her ports and dockyards, and for safeguarding her coastal trade. It may be mentioned that the floating trade of the Commonwealth exceeds £200,000,000 per annum, and its adequate protection involves corresponding naval provision with such naval war material as will permit the principal lines of sea communication being kept open; or, if not, ensuring that Australian ports are fully defended.

For defence of floating trade the Commonwealth Government decided to build an Australian fleet, and in March, 1909, contracted for the construction of torpedo boat destroyers. Selected Australian workmen were sent to Britain to be trained in the yards of the contractors. The subsequent development of the Australian Navy is traced hereinafter.

(ii.) *The Naval Forces under the Federation.* Prior to 1905 a naval officer commanding administered the naval forces. On 12th January of that year the Council of Defence was established to deal with all questions of policy, and the Naval Board, then first constituted, took over the administration of the Commonwealth naval forces. The former body was augmented in 1911. Continuity of policy and administration are thereby believed to be ensured, whilst efficiency and uniformity are provided for in the scheme of inspection and report by an officer who, as Director of Naval Forces, is appointed to deal with the training of the *personnel*, and the condition of the *matériel*, of naval forces and works.

Commonwealth naval forces have been gradually growing in numbers. The strength on 30th June, 1912, was—

Permanent Naval Forces (sea-going)	...	...	862
Administrative and Instructional Staff	...	...	124
Reserves	...	...	3,983
			<hr/>
			4,969

In addition, there were 40 in the headquarters of the Navy Office. On 1st July, 1912, 750 trainees were transferred from the Senior Naval Cadets to the adult forces.

(iii.) *Harbour Defences.* The vessels for harbour defence obtained by the several colonies prior to federation, and remaining at 30th June, 1912, were as follows:—*Protector* (steel cruiser); *Gayundah* and *Paluma* (steel gun vessels); *Childers* and *Countess of Hopetoun* (first-class torpedo boats). The *Protector* and *Gayundah* are used for the sea-training of the Naval Militia.

§ 3. Growth of the Cadet System.

1. **Formation of Cadet Corps.**—Many years before the consummation of Australian federation the systematic military training of lads had been instituted in the schools of the colonies, and the cadet system had attained considerable development. The Commonwealth Government made arrangements with the various State Departments of Education for boys attending school to be afforded facilities for drill by their teachers, and regular instruction by the Cadet Instructional Staff of the military forces. The strength of the cadets increased rapidly under the Commonwealth defence system, and under the recently-introduced scheme (see § 5 *infra*) has shewn great expansion. Senior cadet battalions, for boys having left school, formed a connecting link between the schoolboy soldiers and the citizen forces. Mounted cadet corps were also formed in various parts of the Commonwealth, the members supplying their own uniforms, mounts, and horse-gear, and being trained in troop and squadron drill by instructors appointed for that purpose. Their organisation was distinct from the educational establishments, but they were under similar conditions as regards drill and discipline.

The strength of the Commonwealth cadets, school, senior, and mounted, in the various States was on 30th June, 1911, as follows:—New South Wales, 11,066; Victoria, 4447; Queensland, 5129; South Australia, 2886; Western Australia, 2847; Tasmania, 1648; Commonwealth, 28,023.

Naval cadets were also organised under the Defence Act. These numbered 748 on 30th June, 1911. Generally, the instruction, given by instructors of the naval forces, aimed at embracing all branches of a seaman's training.

The voluntary system came to an end on 30th June, 1911. On the following day the compulsory training provisions of the Defence Acts came into force.

2. **Other Organisations.**—Boys' Brigades, Scouts, and "Aids" have been instituted in connection with various societies. These are not under Governmental control, and receive no State aid. Instruction is given in physical and elementary military drill, knotting and splicing, signalling, first aid to the injured, observation and tracking, field sketching, map reading, bridge building, cooking, hygiene, &c. Members of these associations must undergo the training laid down by the Defence Act.

§ 4. Commonwealth Defence Legislation.

1. **The Defence Acts of 1903 and 1904.**—(i.) *General Provisions of the Acts.* The defence of Australia at the present time is enacted and prescribed by the Defence Acts 1903-12 of the Federal Parliament. The provisions of the Acts of 1903 and 1904 and the regulations under them are still the main working principles of Australian defence, the necessary expansion being provided for in the amendments of 1909, 1910, 1911, and 1912, which also enacted the system of compulsory training. By the Acts of 1903 and 1904 the Governor-General was empowered to arrange for the efficient defence of the Commonwealth, and to appoint officers to responsible positions and to commissioned ranks. The defence force was declared to consist of the naval and military

forces of the Commonwealth, divided into "permanent" and "citizen" forces. The former consisted of persons bound to continuous service for a term; the latter of persons not so bound. Prior to 1911, they were divided into "militia," who were paid, and "volunteers," who were not ordinarily paid, for their services. Members of rifle clubs, duly sworn, and enrolled persons who had done active service, made up the reserve forces. Until the inauguration of compulsory training on 1st July, 1911, enlistment in time of peace was voluntary. In time of war, the citizen forces might be called out by the Governor-General, who was to state his reason for so doing, and communicate the fact to Parliament. Members of the naval forces might be called upon to serve outside the Commonwealth, but those of the military forces were not liable for such service. The forces might be used for the protection of the States from domestic violence. Command in time of war might be given to the Commander of any portion of the King's regular forces, or of the King's naval forces. For training, and in war, the naval forces might be placed on board ships of the navy of the Australian station. The Army Act (Imperial) was to apply to the Commonwealth military forces, and the Naval Discipline Act (Imperial) to the Commonwealth naval forces, while on active service, except where those Acts were inconsistent with the Commonwealth Defence Acts. Regulations, however, might prescribe that any provisions of the Imperial Acts named should not apply. Provision was to be made out of the Consolidated Revenue Fund for families of men killed or incapacitated while on service.

Male inhabitants between 18 and 60 years of age were liable to serve in time of war, Parliament being informed of the occasion if in session, and being summoned within ten days if not. Under the Acts of 1903 and 1904 persons the doctrines of whose religion forbade them to bear arms or perform military service might be exempted.

Naval and military cadet corps were also established—to consist of schoolboys over 12 years of age, and youths between 14 and 19 not attending school. They were not liable for active service.

The construction and maintenance of vessels, building and equipment of forts, laying of mines, institution of arms and ammunition factories, the acquisition of artillery and rifle ranges, and the performance of all acts for efficient defence and protection, were provided for. In time of war, the control of railways and tramways might be assumed by an officer duly authorised, and vehicles and boats might be impressed, and troops billeted and quartered. Heavy penalties were decreed for unlawfully giving information as to defences, or unlawfully obtaining same; and for supplying inferior provisions, material, equipment, etc. Information required under the Act was to be correctly given. Persons required to enlist were to do so, and were to take the oath of affirmation prescribed, and no person was to procure or aid desertion or to harbour deserters. Obstructing drill, personating, sketching fortifications and works or trespassing in them, or even being, with the intention of graphic representation, in their vicinity with drawing or photographing materials, etc., was forbidden.

An exhaustive body of regulations was drawn up under the authority of these Acts, and the details of service and duties of members of the forces were set out therein. These, having been notified in the *Government Gazette*, had the force of law.

The Governor-General, under the powers conferred upon him by the Acts, appointed an Inspector-General of the Military Forces, a Director of the Naval Forces, District Commandants, and commissioned officers generally. In the first appointment of officers, preference is accorded to persons who have served in the ranks. Promotions of officers are generally subject to passing the prescribed examinations, but distinguished service, or marked ability and gallantry in active service, may be permitted to gain promotion without examination. A Council of Defence, and Boards of Military and Naval Administration were constituted. A Reserve of Officers was formed, and also an Unattached List, whence officers might be employed for duty with any corps or with the staff. The authority of the Act to establish a Naval and Military College was availed of, and a Chair of Military Science was endowed by the University of Sydney, an officer of the Imperial general staff being appointed Director of

Military Science. Reference is made hereinafter to the course of instruction. It is hoped that now not only soldiers will be enabled to perfect themselves in the duties of their profession, but that the influence of the teaching will pervade all classes of the community, and enable Australian citizens to speak and vote more effectively, because with greater knowledge, when defence matters come up for consideration.

(ii.) *Regulations for Efficiency.* Under the regulations certain requirements for efficiency were set out for members of the militia forces, inefficient being discharged. The principal of these requirements were:—Attendance at the annual camps of training; completion of a course of "field training" in the special duties of the arm to which the member is attached; attendance at District Commandants' inspections; and the performance during the year of an allotted amount of drill, generally 12 days or equivalent. In the case of specialist corps the efficiency requirements were greater. Camps, inspections, musketry, and field-training parades count for efficiency.

2. The Defence Acts of 1909, 1910, 1911 and 1912.—The principal provision of the Act of 1909 is the addition of enactments relating to universal obligation in respect of naval and military training; the making of regulations exempting from service (persons with objections to service on religious grounds being exempt in any case); registration and enrolment for naval and military training; and establishment of a military college. Authority is provided for the establishment and maintenance of factories for the manufacture of naval and military equipment and uniforms; and for the employment of persons in a civil capacity for any purpose in connection with the Defence Force, or in any factory established under the Act. Owners of horses, vehicles, etc., which may be impressed for defence purposes, may be required to register them periodically, and any land may be entered under proper authority. Intoxicating and spirituous liquors are forbidden in camps and canteens. The provisions of the Acts of 1909, 1910 and 1911, regarding periods of universal training, are set out below (pages 1054-55). Heavy penalties may be exacted from persons who evade service, and from employers who prevent employees from serving. Exemptions from training in time of peace are permitted to those medically unfit; to those not substantially of European origin or descent (except duties of a non-combatant nature); to school teachers qualified as naval or military instructors, or who are officers of cadets; to members of permanent forces. Specified areas may be exempted. Registration of all liable to serve is prescribed. A Military College under a director and staff is to be established, and instruction is to be given by its graduates to the citizen forces.

The Act of 1910 is an extension of that of the previous year. The exemptions from service are further defined, and comprise membership of Parliament; the holding office as judges, magistrates, constables, prison warders, and lighthouse keepers. Hospital doctors and nurses, non-Europeans, and persons with conscientious objections to bearing arms, are to be exempted from duties other than those of a non-combatant nature. Burden of proof of exemption rests on the person claiming it. Authority is given for the establishment and maintenance of horse depôts, farms and stations for the breeding of horses. Uniforms are to be free to all ranks of the citizen forces. The period of adult training is extended to seven years in place of two years provided under the Act of 1909, and the duration of service with the adult reserves is consequently shortened to one year instead of six. The organisation and duties of the Commandant and members of the Military College are further defined, and provision is made that any member of the forces over the age of nineteen years who passes the prescribed examination may be admitted to the college.

The Act of 1911 shortens the hours of parade for Senior Cadets by about one-third, and provides for leave of absence on account of weather, or residence at a distance from parade ground.

The Act of 1912 permits those who have attained commissioned rank as Senior Cadets, to remain in that organisation instead of serving in the citizen forces upon

reaching the age for transfer ; authorises the impressment of aerial machines ; simplifies the method of prosecution of delinquents and the enforcement of penalties ; and reduces the prescribed training of junior cadets by one-fourth.

§ 5. The New Defence System.

1. **Defence Policy.**—(i.) *Peculiar Position of Australia.* The Acts of 1909, 1910, 1911 and 1912 were the direct outcome of the feeling, shared by all classes of the community, that Australia was insecure under the voluntary system. Recently, the Minister of Defence referred to the fact that if on a map of the world all the countries stained with blood were to be marked, Australia would be the only white spot. It is the national policy to effect a guarantee, by thorough preparation for war, that this exemption should continue.

(ii.) *Continuity of Administration.* Under the recent Acts the system of administration by naval and military boards continues. The Governor-General is empowered to make appointments and promotions of naval and military officers ; appoint an officer to command the whole or any portion of the naval forces ; appoint military districts and sub-districts ; raise, organise and maintain permanent and citizen naval and military forces, as may be deemed necessary for the defence and protection of the Commonwealth and of the several States.

(iii.) *Compulsory Training.* By the Defence Acts of 1903 and 1904 all male inhabitants of Australia between the ages of 18 and 60 years were made liable to serve in the defence forces *in time of war*. The recent Acts make training and service compulsory *in time of peace*. By the Act of 1909 the principle of universal liability to be trained was made law for the first time in any English-speaking community. The liability is upon all male inhabitants of Australia (except those specially exempted), who have resided in the Commonwealth for six months and are British subjects.

2. **The Military Scheme.**—(i.) *The Land Army.* The Act of 1909 prescribed Junior cadet training for lads 12 and 13 years of age, followed by Senior cadet training for lads from 14 to 18 years of age, equivalent in duration to sixteen whole days annually (of which eight should be in camps of continuous training), the remainder being divided into convenient parades throughout the year. Thereafter adult training for two years in the citizen forces, equal to sixteen days annually (eight in camp), followed by registration or one muster parade each year for six years. The existing citizen forces were to be continued. Arrangements for registration, enrolment, inspection, and medical examination of all persons liable to be trained were made, and it was enacted that a Military College should be established. Some modifications were introduced in the Acts of 1910, 1911 and 1912.

(ii.) *Visit and Report of Viscount Kitchener.* Before the Act came into operation, viz., at the end of 1909, Field-Marshal Lord Kitchener visited Australia at the invitation of the Government, and after inspecting the military forces at work at camps held at various places throughout the Commonwealth, and the forts and defence works erected or in course of erection, reported upon the whole scheme of land defence. His recommendations (with the exception of some confidential matters) were made public in the form of a memorandum in February, 1910. A scheme was propounded, its main principles being in conformity with the Defence Acts 1903-9. The adoption of some of Lord Kitchener's recommendations necessitated further amending Acts. The trend and purport of the published report are given in the Commonwealth Year Book, No. 4, pp. 1085-1088.

3. Organisation of Land Forces under the Defence Acts 1903-12.—(i.) *Proclamation.*

The Defence Act 1910, passed by the Parliament which was returned at the elections of April, 1910, came into operation on 1st January, 1911, by proclamation. Some slight modifications were made in the Acts of 1911 and 1912. On account either of sparseness of population or difficulty regarding communications (either of which reasons would entail expenditure incommensurate with military efficiency), certain areas are exempted. In all other parts of the Commonwealth territory the clauses decreeing universal training are proclaimed.

(ii.) *Establishments.* The proposed organisation is based upon necessary considerations of (a) the numbers available; (b) the length of service demanded; (c) the proportion of the various arms required. It differs in some of its details from the scheme propounded by Lord Kitchener and includes—

- 28 regiments of light horse;
- 56 batteries of field artillery;
- 92 battalions of infantry;

and a due proportion of engineers, army service, and army medical corps, troops for forts, and other services.

(iii.) *Military Population.* In connection with the numbers available the figures of male population are of interest. The total number at cadet age, *i.e.*, between 12 and 18, at the census of 1911 (3rd April) was about 260,000; at citizen soldier age, *i.e.*, between 18 and 26, 366,000; these latter, with 330,000 at ages between 26 and 35, give 696,000 as the total males at the best period for military service. In addition there were about 614,000 between 35 and 60.

(iv.) *Compulsory Provisions.* The actual requirements under the scheme are contained in sections of the Defence Act 1903-1912, as follows:—

Section 125. All male inhabitants of Australia (excepting those who are exempted by this Act) who have resided therein for six months, and are British subjects, shall be liable to be trained, as prescribed, as follows:—

- (a) From 12 to 14 years of age, in the junior cadets;
- (b) From 14 to 18 years of age, in the senior cadets;
- (c) From 18 to 25 years of age, in the citizen forces; and
- (d) From 25 to 26½ years of age, in the citizen forces.

Provided that, except in time of imminent danger of war, service under paragraph (d) shall be limited to one registration or one muster parade.

Section 126. (a) The training in the junior cadets shall begin on the first day of July in the year in which the persons liable reach the age of 12 years, and shall continue for two years;

Provided that, in the case of persons who reach the age of 13 years in the year in which this enactment commences, the training shall begin on the first day of July in that year, and continue for one year.

(b) The training in the senior cadets shall begin on the first day of July in the year in which the persons liable reach the age of 14 years, and shall continue for four years;

Provided that, in the case of persons who reach the age of 15, 16, or 17 years in the year in which this enactment commences, the training shall begin on the first day of July in that year and continue for three years, two years, or one year respectively.

(c) The training in the citizen forces shall begin on the first day of July in the year in which the persons liable reach the age of 18 years, and shall continue for seven years.

Section 127. The prescribed training shall be, in each year ending the 30th June, of the following duration:—

- (a) In the junior cadets 90 hours; and
- (b) In the senior cadets four whole-day drills, twelve half-day drills, and twenty-four night drills; and
- (c) In the citizen forces sixteen whole-day drills or their equivalent, of which not less than eight shall be in camps of continuous training.

Provided that in the case of those allotted to the naval forces and to the artillery and to the engineer arms of the military forces and to units of the Army Service Corps allotted to those arms, the training shall be twenty-five whole-day drills or their equivalent, of which not less than seventeen shall be in camps of continuous training.

Provided also that in the senior cadets the duration of a whole-day drill shall not be less than four hours, of a half-day drill not less than two hours, and of a night drill not less than one hour.

Provided also that in the Citizen forces the duration of a whole-day drill shall not be less than six hours, of a half-day drill not less than three hours, and of a night drill not less than one hour and a half.

Provided also that in the senior cadets the number and duration of half-day and night drills may be varied by the substitution of other drills as prescribed of a total duration of not less than forty-eight hours. The regulations may provide that attendance at such drills as are prescribed shall be compulsory.

Provided also that the Minister may, by *Gazette* notice, declare that whole-day drills and half-day drills may be substituted for night drills in any districts or localities specified in the notice.

Provided also that in the case of senior cadets, who reside over two miles from the place appointed for training, attendance for a less number of hours than prescribed above may be allowed to count as prescribed for the full statutory duration of drills, and power may be given to the prescribed officers to grant leave of absence from training required by this Act when the conditions of the weather, by reason of excessive rain or heat, would render attendance a hardship; and equivalent attendance as prescribed may be required in lieu thereof.

The provisions for registration and inspection are contained in sections 142, 143, and 144 of the Act, and are as follows:—

Section 142. All male persons of Australia, who have resided therein for six months, shall register themselves or be registered by a parent, guardian, or other person acting *in loco parentis*, in the manner prescribed—

- (a) During the months of January and February in the year in which they reach the age of 14 years (or, in the case of persons who in the year in which this enactment commences will reach the age of 15, 16, or 17 years, during the months of January and February in that year), or
- (b) If not then present in Australia, or if for any other reason not registered at the prescribed time, within such further time and in such manner as is authorised by the regulations.

Any proceedings for an offence against this section may be instituted at any time within two years after the commission of the offence.

Section 143. (a) All persons liable to be trained under paragraphs (c) and (d) of section 125 of this Act and not exempted by this Act shall be allotted to the several arms and corps.

(b) Of all persons liable to be trained such a number as are required shall first be allotted for training in the naval forces.

(c) All persons liable to be trained under paragraphs (b), (c), and (d) of section 125 of this Act who are forbidden by the doctrines of their religion to bear arms, shall, so far as possible, be allotted to non-combatant duties.

Section 144. All persons liable to be trained shall attend at the prescribed times and places for inspection, and shall give such information as is prescribed, and shall submit to the prescribed medical examination.

(v.) *Exemptions and Disabilities for Service.* Exemptions from service are set out in sections 61, 61a, 138, 140, and 140a of the Act, as given below:—

Section 61. The following shall be exempt from service in time of war, so long as the employment, condition, or statute on which the exemption is based continues:—

- (a) Persons reported by the prescribed medical authorities as unfit for any naval or military service whatever; and
- (b) Members and officers of the Parliament of the Commonwealth or of a State; and
- (c) Judges of Federal or State Courts, and police, stipendiary, or special magistrates of the Commonwealth or of a State; and
- (d) Ministers of religion; and
- (e) Persons employed in the police or prison services of the Commonwealth or of a State; and
- (f) Persons employed in lighthouses; and
- (g) Persons employed as medical practitioners or nurses in public hospitals; and
- (h) Persons who are not substantially of European origin and descent, of which the medical authorities appointed under the regulations shall be the judges; and
- (i) Persons who satisfy the prescribed authority that their conscientious beliefs do not allow them to bear arms; and
- (j) Persons engaged in any employment specified by the regulations or by proclamation.

Provided that, as regards the persons described in paragraphs (g) (h) and (i) of this section the exemption shall not extend to duties of a non-combatant nature.

Section 61a. Where any question arises as to whether a person is exempt from service in the citizen forces, the burden of proving the exemption shall rest on the person claiming the exemption, and applications for exemption shall be decided by the Courts authorised in that behalf by the regulations.

Section 140. The Governor-General may by proclamation—

- (a) Exempt from the training in time of peace, all persons residing within any area specified in the proclamation;
- (b) Vary or extend any area so specified; or
- (c) Withdraw any exemption under this section; or
- (d) Limit any exemption under this section to any part of the training required by this Act.

Section 140a. The Governor-General may by proclamation grant a temporary exemption for a period not exceeding one year to—

- (a) Persons who reside outside the areas in which training is carried out; and
- (b) Persons who reside at so great a distance from the places appointed for training that compulsory attendance at the training would involve great hardships.

Section 138 added to the exemptions permitted under section 61 the following:—

- (a) School teachers who have qualified at a school of naval and military instruction, or other prescribed course, as instructors or officers of the junior or senior cadets.
- (b) Members of the permanent naval or military forces.

It is also provided that—

Persons who are students at a Theological College as defined by the regulations, or theological students as prescribed, may, while they remain such students, on application, be exempted by any prescribed authority from the prescribed training, but shall, on ceasing to be such students, undergo such equivalent training as prescribed, unless exempted by some provision of this Act.

Certificates of exemption will be issued in proclaimed areas by the area officer, in exempt areas by an officerspecially appointed. In case of dispute the matter will be referred to the Brigade-Major or Commandant. If the decision of this officer is not accepted, application may be made by the person claiming exemption to the Courts authorised in that behalf by the regulations, whose decision is final. Burden of proof rests upon the claimant.

Any person who has been convicted by a Court of a disgraceful or infamous crime, or is of notoriously bad character, is permanently disqualified for service.

(vi.) *Penalties for Prevention or Evasion.* Employers may not prevent their employees from serving; nor may persons liable to service fail to perform it. The provisions of the Act regarding prevention and evasion are:—

Section 134. (a) No employer shall prevent, or attempt to prevent, any employee who is serving or liable to serve in the cadets or citizen forces, and no parent or guardian shall prevent any son or ward who is so serving or liable to serve, from rendering the personal service required of him, or from attending any camp of instruction appointed to be held by the headquarters of the Commonwealth or any military district, and no employer shall in any way penalise or prejudice in his employment, or attempt to penalise or prejudice in his employment, any employee for rendering or being liable to render such personal service, or for attending such camp, either by reducing his wages or dismissing him from his employment or in any other manner:

Provided that this section shall not be construed to require an employer to pay an employee for any time when he is absent from employment for the purpose of training.

Penalty: One hundred pounds.

(b) In any proceedings for any contravention of this section, it shall lie upon the employer to show that any employee, proved to have been dismissed or to have been penalised or prejudiced in his employment or to have suffered a reduction of wages, was so dismissed penalised or reduced for some reason other than for having rendered or being liable to render the personal service required of him or from attending the camp.

Section 135. (a) Every person who in any year, without lawful excuse, evades or fails to render the personal service required by this Part shall be guilty of an offence, and shall, in addition to the liability under section one hundred and thirty-three of this Act,¹ be liable to a penalty not exceeding One hundred pounds:

(a1) Every person who, being a person liable to training under this Part (i.) fails, without lawful excuse, to attend a compulsory drill; or (ii.) commits a breach of discipline while on parade; shall be guilty of an offence, and shall in addition to any liability under section one hundred and thirty-three of this Act,¹ be liable to a penalty not exceeding Five pounds.

(b) Any penalty under this section may be recovered summarily on the information or complaint of a prescribed officer.

(c) In fixing the amount of the penalty, the Court shall have regard to the means of the person offending and those of his parents.

(d) In addition to any penalty imposed, or (where the Court is of the opinion that the imposition of a penalty would involve undue hardship) in lieu of imposing any penalty, the Court may, if it thinks fit, commit the offender to confinement in the custody of any

1. Section 133 enacts that non-efficient must attend an equivalent additional training for each year they are non-efficient.

prescribed authority for such time not exceeding twenty days, as it thinks fit, or for a time corresponding in duration to the time which, in the opinion of the Court, would be taken up in rendering the personal service required.

(e) Any person committed to the custody of a prescribed authority in pursuance of this section may be detained by that authority at any prescribed institution or place, and while so detained shall be subject to the regulations governing that institution or place, and to the training and discipline as prescribed.

(f) It shall not be necessary for the confinement to be continuous; but the person having the custody of the offender may (subject to the regulations) release him for such periods, and call upon him to return to custody at such times, as he thinks fit; to the intent that he may follow his occupation, and that the times and periods of his confinement may correspond, as nearly as practicable, with the times and periods which he ought to have occupied in rendering personal service.

(g) Any person detained in any prescribed institution or place in pursuance of this section who escapes therefrom, or who being released from custody fails to return thereto, may be arrested without warrant by any prescribed person, and taken back to the institution or place, and may on the application of any prescribed officer be ordered by any Court of summary jurisdiction to be detained for such additional period not exceeding twenty days as the Court thinks fit to order.

(h) A person liable to be trained under the provisions of paragraphs (a) and (b) of section one hundred and twenty-five of this Act shall not be committed to gaol in default of payment of a pecuniary penalty imposed for an offence against the provisions of this section, but the Court may order that, in default of payment of the pecuniary penalty imposed, the person shall be committed to the custody of any prescribed authority for such time, not exceeding the time for which the Court could, but for this sub-section, have committed the person to gaol in default of payment of the pecuniary penalty imposed, as the Court thinks fit.

(i) Where a person liable to be trained under the provisions of paragraphs (a) and (b) of section one hundred and twenty-five of this Act, has been convicted, before the commencement of this sub-section, of an offence against this section, and but for sub-section (h) of this section would be liable to be committed to gaol in default of payment of the pecuniary penalty imposed for the offence, and makes default in payment of the penalty, he may, on the application of the prescribed officer, be committed to the custody of any prescribed authority for such time, not exceeding the time for which, but for sub-section (h) of this section, he might have been committed to gaol in default of payment of the pecuniary penalty imposed, as the Court thinks fit.

(j) In places where Children's Courts exist, offences against this section committed by cadets under the age of 16 years shall be prosecuted in such Courts as far as is reasonably practicable.

Section 136. Every person who, without lawful excuse, evades or fails to render the personal service required by this Part shall, unless and until he has performed equivalent personal service as prescribed, be and remain ineligible for employment of any kind in the Public Service of the Commonwealth.

(vii.) *Efficiency Requirements.* The requirements for efficiency in the citizen forces and in the senior cadets comprise attendance at compulsory parades, as set out in section 127 (*supra*).

These are compulsory parades, and are increased by extra voluntary parades, the object of which is to enable those who are backward to become proficient, and those who desire to qualify for promotion to obtain the necessary practice. Where leave of absence has been given from a statutory parade, attendance at a voluntary drill will count towards the efficiency requirements; but a statutory parade missed without leave requires two voluntary parades as compensation.

At the end of the year's training, a Board of Officers will classify the trainee as efficient, or otherwise. Those not efficient must do an extra year's training for each failure. Thus there must be twelve annual entries of efficiency or exemption in each soldier's record, before he receives his discharge. The standard required is based on the number of years' training already performed by the member, the work carried out in the unit during the year, and the grade of proficiency that should be reached by a man of ordinary capacity giving proper attention to his work.

Variations may be permitted in the compulsory half-day and night parades, but the total required by section 127 must be served. The whole day parades will usually be held on public holidays. Schools, containing at least sixty senior cadets, may form separate units, and may arrange their parades to suit their school time table; but the cadets must attend the battalion parades.

The efficiency requirements for reserves have not yet been promulgated.

(viii.) *Allotment to Arms.* During senior cadet training there will be no allotment to the various arms of the service. The work of the trainee will cover the foundation work necessary for service in any arm, viz.:—Marching, discipline, the handling of arms, musketry, physical drill, first aid, guards and sentries, tactical training as a company in elementary field work, and elementary battalion drill. Thereafter the cadet with special educational or technical qualifications will be drafted as a recruit to one or other of the specialist or departmental corps, other cadets passing to the light horse and infantry.

(ix.) *Uniform and Equipment of Senior Cadets.* The uniform is simple and inexpensive, but suitable. It consists of hat, woollen shirt, woollen breeches, puttees, and boots. It is free, and issuable every second year. There is no distinction, and uniform will be worn at all parades and drills. Wearing of uniform when not on military duty or proceeding to or from parade is forbidden.

Equipment consists of a cadet rifle with sling and a waist-belt with pouch. The elder senior cadets who are good shots (but not exceeding 10 per cent. of the strength) are allowed .303 (service) rifles. Free ammunition is provided, 150 rounds of ball being available for each cadet. Arms must be kept in the offices or storerooms of the units, and issued for parades only. On no account are arms permitted to be taken to the cadets' homes.

(x.) *Citizen Forces.* On 1st July, 1912, the eldest class of those who commenced senior cadet training on 1st July, 1911 (viz., those born in the year 1894) passed as recruits to the various arms of the new citizen force, forming its first members. Their uniform is simple and suitable for service, and the issue to each soldier is such that he is able to parade (upon notice) with two woollen shirts, two pairs breeches, greatcoat, hat, sleeping-cap, two pairs puttees or leggings, two pairs military boots, and kit-bag. The future force is planned to comprise 120,000 of all ranks including about 5000 citizen officers and 8000 non-commissioned officers. Promotion will be absolutely by merit, the principle adopted being that *the best soldiers must lead, whatever their civil avocation or birth.*

(xi.) *Reserves.* No new reserves are created under the recent Acts. The present reserves consist of (a) officers, etc., retired from active service; (b) members of rifle clubs. Provision will probably be made for those who, at the age of 26 years, pass out of the organisations created under the Act, to continue service with rifle clubs; but if this is not enacted, it is considered probable that a large proportion of the fully-trained citizen soldiers will remain rifle club members.

(xii.) *Number under Training.* The male population of Australia of military age gives about 177,000 between 14 and 18 years, and about 321,000 between 18 and 25 years. The estimated medical rejections (based upon the experience of European countries) will probably be 10 per cent. for senior cadets, and from 30 to 35 per cent. for citizen soldiers. To these must be added persons in exempt areas. The number under training, when the system is in full operation, is estimated at 100,000 senior cadets, and 120,000 citizen soldiers.

(xiii.) *Allotment of Units to Divisional Brigade, Battalion, and Training Areas.* Three brigades will form a division. Two brigade areas will each provide four battalions of infantry, one field artillery brigade (with proportion of divisional ammunition column), one field company of engineers, one company army service corps, and one field ambulance. The other brigade of the division provides four battalions of infantry, two squadrons of divisional light horse, one howitzer brigade, one divisional signal company of engineers, one company army service corps, and one field ambulance. Light horse, and field artillery units for light horse brigades, will also be furnished by some of the areas. Personnel for garrison artillery and submarine and electric engineers for garrison forces will eventually be supplied in the areas nearest to such localities. The average annual contingent of recruits will be about 155 for each battalion area, plus such additions as are required for light horse and field artillery units raised therein. The figures shewn in the following tables are approximate, and include the recruits (18-19 year), but not the 25-26 year men.

ULTIMATE ALLOTMENT OF UNITS TO BRIGADE, BATTALION, AND TRAINING AREAS.

State.	Brigade Areas.	Battalion Areas.							Training Areas.	
		No.	No. of Battalions.	Providing the undermentioned units.				Total Nos. in Training in Areas.	No.	
				Infantry and Proportion of Engineers, A.S.C. and A.M.C.	Light Horse.		Field Artillery.			
					Squadrons.	Nos.	Batteries.			Nos.
—	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	
N. S. Wales ...	8	33	32,901	40	4,490	20	3,220	40,611*	75	
Victoria ...	7	29	28,913	36	4,041	19	3,059	36,013†	65	
Queensland ...	3	11	10,967	16	1,796	7	1,127	13,890‡	28	
S. Australia...	2	9	8,973	12	1,347	5	805	11,125§	24	
W. Australia	2	6	6,979	4	449	3	483	7,911||	20	
Tasmania ...	1	4	3,988	4	449	2	322	4,759¶	12	
Totals ...	23	92	92,721	112 28 Rgts.	12,572	56	9,016	114,309**	224	

* Also 766 for forts. † Also 327 artillery and 227 engineers at Geelong and Queenscliff for forts. ‡ Also 79 garrison artillery and 13 engineers for Lytton. § Also 86 artillery for forts. || Also 156 artillery and 32 engineers for forts. ¶ Also 86 artillery and 32 engineers for forts. ** Also 1804 for forts.

(xiv.) *Higher Training.* The principal institution for the higher training of officers is the Royal Military College. The college is situated on the Duntroon Estate, outside, and on the eastern boundary of Canberra, the Federal capital. It contains barracks for 150 cadets, classrooms, well-equipped physical and chemical laboratories, library, riding school, etc. A gymnasium is being erected. Quarters have been provided for married and bachelor officers, and for warrant and non-commissioned officers of the staff. It is intended that the commissioned ranks of all arms of the permanent forces will be filled by graduates of the college. Before admission, the parents of a candidate must state that he intends to adopt the military service as his profession in life. Ten candidates per annum from New Zealand are entered and trained on behalf of the Dominion Government, which pays £200 per annum for each. Entrance is by open competitive examination. In February, 1911, the first examinations were held, and lectures and studies commenced at the college in the same year, the opening ceremony being performed by the Governor-General on 27th June, 1911. There were then 41 cadets at the college, 10 being from New Zealand. In May, 1913, the instructional

staff numbered 8 military officers and 8 civilian professors and lecturers, and the administrative staff 4 officers and one civilian—a total of 21. The strength of cadets was then 112, of whom 17 came from New Zealand. There were also 49 horses belonging to the college, for mounted work, driving, etc. The full establishment of cadets is 150. This number will be reached in March, 1914, and includes 40 New Zealanders. No fees are charged for maintenance and instruction, and each cadet receives 5s. 6d. per day to meet expenses of uniform, books, instruments, etc. The course is to last four years, and will be followed by a tour of duty in England or India. The graduates will then do probationary duty in administrative and instructional work, and eventually take the place of the area officers at present engaged.

Government aid is also furnished to United Service Institutions, which have been established in the larger centres. Lectures of great value are delivered by specialists, and war games, manoeuvres, etc., carried out. Some of the institutions have large and well-selected libraries.

Schools of instruction, staff tours, etc., are also conducted, and a military magazine is published.

(xv.) *Record for Anthropometric Purposes.* In connection with the medical inspection, it has been arranged that the colour and character of hair, and the colour of eyes of those examined, shall be recorded for statistical purposes. Instructions have been compiled by the Commonwealth Statistician, in accordance with which the area officers classify the hair-colour under four divisions, comprising three types of fair, two of reddish, three of brown, and two of black. The character of the hair is recorded also in four divisions, viz.: (a) perfectly straight and smooth; (b) wavy and curly; (c) frizzy; (d) woolly. Intermediate types are classed under the heading to which they approach most nearly. The eye-colour is classified under four divisions, comprising sixteen types, viz., four of greyish, four of bluish, four of yellowish, and four of brown and hazel.

It is possible that later the recommendations of the British Anthropometric Committee will be adopted.

The object of the investigation is to study the development of the Australian nation, the necessary statistic for military identification purposes affording a unique opportunity. A possibility exists of co-ordinating anthropometric work in the schools with that done in connection with compulsory military service.

4. Compulsory Training in Operation.—(i.) *Inauguration of the System.* The first work in the active carrying out of the scheme commenced with the training of 200 non-commissioned officers for the instruction of the projected army in a six months' camp. Area officers were chosen from the citizen forces, and underwent a six weeks' course of instruction. With the year 1911 came the active enrolment of the new cadets who commenced training on 1st July following.

(ii.) *Stages.* The stages are as follows:—

First stage, January to June, 1911.—Existing junior and senior cadets continued to 30th June, 1911, but all equipment returned by that date; registration, inspection, and medical examination of lads whose 14th, 15th, 16th, and 17th birthdays occurred in 1911; preparations made to clothe and equip the new senior cadets.

Second stage, July, 1911, to June, 1912.—Registration, etc., of lads whose 14th birthday occurred in 1912; new junior and senior cadet training from 1st July, 1911. Of the latter, about 17,000 passed as recruits, inaugurating the new citizen forces in the third stage.

Third stage, July, 1912, to June, 1913.—Registration, etc., of lads whose 14th birthday occurs in 1913; new citizen forces, training began with about 17,000 recruits (18 year old persons allotted from the new senior cadets). During the third, fourth, and subsequent stages the new senior cadet force, numbering 100,000, continues. During this period the establishments under the new organisation will be completed.

Fourth and subsequent stages, after July, 1913 (and each year).—Registration, etc., of lads whose 14th birthday occurs in 1914, and so on. In the fourth and subsequent stages, the new citizen forces will also be continued, increasing each year by about 20,000.

(iii.) *Summary of Working of the System in 1911-12 (Second Stage).* The following table gives a summary of work done under the new scheme up to 31st December, 1911:—

UNIVERSAL TRAINING.—REGISTRATIONS, MEDICAL EXAMINATIONS, AND EXEMPTIONS TO THE 31st DECEMBER, 1911.

SENIOR CADETS.

Military District.	Total Registrations in Training Areas.	Total Medical Examinations.	Number Medically Fit.	Percentage Medically Examined who are Fit.	Number Unfit and Temporarily Unfit.	Percentage Medically Examined who are Unfit or Temporarily Unfit.	Total Exemptions granted in Training Areas.	Total Number liable for Training.	Total Number actually in Training.
1st (Queensland) ...	24,466	14,413	13,361	92.7	1,052	7.3	11,631	12,388	11,808
2nd (N.S.W.) ...	54,390	37,860	35,235	93.1	2,625	6.9	18,841	34,280	33,151
3rd (Victoria) ...	48,569	33,054	31,014	93.8	2,040	6.2	16,437	29,692	28,653
4th (S. Australia)...	14,685	11,307	10,580	93.6	727	6.4	5,544	9,144	8,576
5th (W. Australia)...	6,894	5,191	4,650	89.6	541	10.4	2,726	4,168	3,833
6th (Tasmania) ...	6,129	3,417	3,259	95.4	158	4.6	2,770	3,357	3,117
Commonwealth ...	155,133	105,242	98,099	93.2	7,143	6.8	57,949	93,029	89,198

UNIVERSAL TRAINING.—MEDICAL EXAMINATIONS TO THE 31st DECEMBER, 1911.

JUNIOR CADETS.

Military District.	Total Number Medical Examinations.	Number Medically Fit.	Percentage Medically Examined who are Fit.	Number Unfit and Temporarily Unfit.	Percentage Medically Examined who are Unfit and Temporarily Unfit.
1st (Queensland)	4,521	4,372	96.7	149	3.3
2nd (N. S. Wales)...	12,621	12,275	97.3	346	2.7
3rd (Victoria) ...	13,129	12,970	98.8	159	1.2
4th (S. Australia)	1,896	1,839	97	57	3.0
5th (W. Australia)	1,303	1,269	97.4	34	2.6
6th. (Tasmania) ...	297	293	98.7	4	1.3
Commonwealth ...	33,767	33,018	97.8	749	2.2

(iv.) *Territorial Organisation and Instruction.* The territorial organisation of the Commonwealth is one of areas based upon infantry units. There are 92 battalion areas, approximately equal in number of males of citizen soldier age, and each containing a battalion of infantry, with either a battery of field artillery (in urban districts), or a regiment of light horse (in country districts), and also a larger or smaller number of

one or more other arms, departmental corps, etc. For internal administrative purposes, the battalion areas are subdivided into two or three training areas. Brigade areas are formed by grouping four battalion areas.

The instructors provided for training existing units and for territorial work in connection with the new system consist of 58 officers and 422 warrant and non-commissioned officers of the instructional staff (permanent), and 216 area officers (temporary). They supervise the training of light horse, infantry, and senior cadet units, and instruct in the non-technical duties of specialist corps. Additional officers and non-commissioned officers in the permanent troops will instruct in technical work.

The officers of the instructional staff act as Brigade-Majors, and as such, represent the Commandant in the brigade area. They are responsible for the instruction of officers of the existing citizen forces, conduct local schools of instruction, supervise and instruct the area officers, and allot the non-commissioned officers of their detail to various duties. Assistant Brigade-Majors are also furnished from the instructional staff. The duties of area officers vary both in nature and extent, and comprise registration and organisation of those to be compulsorily trained; clothing, arming, equipping, and training the new senior cadets; and training recruits in the citizen forces. They also relieve citizen officers of administrative work, and perform the duties of adjutant to militia units.

The staff instructors (warrant and non-commissioned officers) carry out the administrative work of their areas or units, and instruct cadets and recruits in light horse and infantry drill and tactics.

The area officers do not undertake the registering and inspection of junior cadets. There is no provision in the Act for registration before the 14th year; but when the junior cadet presents himself for registration before the area officer, it will be necessary for him to show that he has complied with the requirements of the Act during the two preceding years. State Inspectors of Schools and special inspectors of physical training approved and appointed by the Minister of Defence, undertake the supervision of the great body of the junior cadets, the training being in the hands of school teachers, who have been specially instructed for the purpose. The area officer and staff instructors visit schools where the training is not carried out by the schoolmasters.

(v.) *Summary of the Working of the System in 1912-13 (Third Stage).* The numbers up to 31st December, 1912, include the 1894 quota, who, on 1st July, 1912, passed to the citizen forces. They were:—

UNIVERSAL TRAINING.—REGISTRATIONS, MEDICAL EXAMINATIONS AND EXEMPTIONS TO THE 31st DECEMBER, 1912, FOR TRAINING IN THE CITIZEN FORCES (1894 QUOTA).

Military Dist.	Total Registrations.	Total Medically Exam'd.	Number Medically Fit & Conditionally Fit.	P'centage Medically Exam'd who are Fit & Conditionally Fit.	Number Unfit and Temporarily Unfit	P'centage Medically Exam'd who are Unfit and Temporarily Unfit	Total Exemptions Granted in Training Areas.	Total No. Liable for Training	Total Number Actually in Training.
1st ...	5,578	2,676	2,131	79.6	545	20.4	3,338	2,131	2,124
2nd ...	12,529	7,747	6,515	84.0	1,232	16.0	5,603	6,515	6,454
3rd ...	10,914	6,578	5,425	82.5	1,153	17.5	5,198	5,425	5,323
4th ...	3,556	2,059	1,779	86.4	280	13.6	1,604	1,779	1,738
5th ...	1,606	831	725	87.2	106	12.8	784	725	725
6th ...	1,416	714	593	83.0	121	17.0	763	593	564
Total	35,599	20,605	17,168	83.3	3,437	16.7	17,290	17,168	16,928

**UNIVERSAL TRAINING.—ALLOTMENT OF RECRUITS, 1894 QUOTA, FOR TRAINING
IN CITIZEN FORCES, 31st DECEMBER, 1912.**

Military District.	Establishment of Recruits and Allotment.	Light Horse.	Field Artillery.	Garrison Artillery.	Engineers.	Infantry.	Army Service Corps.	Army Medical Corps.	Unallotted.	No. liable for Training.	No. actually Training.
1st (Q'land.)	{ Establishment 485(a) { Allotment 192	182	(b) 183	62	91	1,840	22	47	12	2,131	2,124
2nd (N.S.W.)	{ Establishment 653(a) { Allotment 238	269	(b) 142	152	183	5,140	68	130	39	6,515	6,454
3rd (Victoria)	{ Establishment 794(a) { Allotment 264	269	(b) 257	80	169	4,685	68	143	118	5,425	5,323
4th (S. Aust.)	{ Establishment 570(a) { Allotment 137	29	(b) 34	39	75	1,474	30	47	...	1,779	1,738
5th (W. Aust.)	{ Establishment 209(a) { Allotment 26	153	(b) 54	58	53	900	8	36	...	725	725
6th (Tas.)	{ Establishment 29(a) { Allotment 28	58	(b) 55	20	56	600	8	18	1	593	564
Total	{ Establishment 2739(a) { Allotment 885	960	(b) 850	401	611	14,639	204	426	170	17,168	16,928

NOTE.—(a) Includes voluntary enlistments. Establishments of recruits liable for service not specified. (b) Recruits enrolled as required to maintain establishments.

**UNIVERSAL TRAINING.—MEDICAL EXAMINATIONS TO THE 31st DECEMBER, 1912.
JUNIOR CADETS.**

Military District.	Total No. Medically Examined.	Number Medically Fit.	Percentage Medically Examined who are Fit.	Number Unfit and Temporarily Unfit.	Percentage Medically Examined who are Unfit & Temporarily Unfit.
1st (Queensland) ...	5,483	5,314	97.0	169	3.0
2nd (New South Wales) ...	15,739	15,297	97.2	442	2.8
3rd (Victoria) ...	14,288	14,186	98.9	152	1.1
4th (South Australia) ...	3,208	3,091	96.4	117	3.6
5th (Western Australia) ...	2,356	2,263	96.0	93	4.0
6th (Tasmania) ...	1,216	1,192	98.0	24	2.0
Total ...	42,290	41,293	97.6	997	2.4

UNIVERSAL TRAINING.—REGISTRATIONS, MEDICAL EXAMINATIONS, AND EXEMPTIONS TO THE 31st DECEMBER, 1912.

SENIOR CADETS.

Military District.	Total Registrations in Training Areas.	Total Medically Exams.	No. Medically Fit.	Percentage Medically Exam'd who are Fit.	Number Unfit and Temporarily Unfit.	Percentage Medically Exam'd who are Unfit and Temporarily Unfit.	Total Exemptions Granted in Training Areas.	Total No. Liable for Training.	Total No. Actually in Training.
1st (Q'land)	24,001	13,689	12,321	90.0	1,368	10.0	11,549	12,321	12,012
2nd (N.S.W.)	52,075	36,658	34,040	92.9	2,618	7.1	17,746	34,040	32,519
3rd (Vic.)	45,164	31,259	28,645	91.6	2,614	8.4	16,123	28,645	28,143
4th (S. Aust.)	14,317	10,059	9,179	91.2	880	8.8	4,982	9,179	8,981
5th (W. Aus.)	7,121	4,735	4,286	90.4	449	9.6	2,724	4,286	4,240
6th (Tas.)	6,051	3,396	3,113	91.7	283	8.3	2,828	3,113	2,902
Total	148,729	99,796	91,584	91.8	8,212	8.2	55,952	91,584	88,797

(vi.) *Proposals for 1913-14 (Fourth Stage).* The citizen soldiers under the Universal Training clauses of the Act who commenced adult training as recruits on 1st July, 1912, with the drafting of the 18 year old trainees, *i.e.*, those born in 1894, to the militia forces, will be augmented by those who attain the age of 18 years in 1913, *i.e.*, those born in 1895. The following are the proposals:—The medical examination is to be completed by 31st March, 1913. Those returned as passed will pass into the citizens forces, developing and augmenting the existing units. Soldiers serving in these units under the old militia system will be allowed to continue to serve until the termination of their period of enlistment, when they will be retired; but warrant and senior non-commissioned officers may be re-engaged. All arms except light horse will be maintained by annual quotas transferred from the senior cadets, as laid down in new Peace and Training establishments. When these are reached these units will be required to detail sufficient officers, non-commissioned officers, and men to form the nuclei of new units. If any existing unit is not considered by the Military Board to be sufficiently efficient to justify its retention, such unit will be disbanded. Also, if an existing unit is so widely scattered as to be costly and inconvenient for administration, such unit will be divided, and will form nuclei for new units which will be raised in the localities in which the scattered portions are located. Except in the case of the light horse, augmentation of existing units is by transfers from the senior cadets only. In light horse units, in the case of those raised outside the five mile radius of any training locality all recruiting is voluntary, and in other cases voluntary enlistments may be allowed if there are not sufficient universal trainees having horses available to keep up the establishment. Tables have been prepared shewing how existing units will be augmented in each brigade area, new units raised, and universal trainees allotted as they reach the age of 18 years, for the next six years. The tables also shew how the existing units will eventually be merged into the new organisation. Trainees posted to the militia forces will be known as recruits for the first year of service. Recruits will be invited in the first instance to volunteer for the branch in which they desire to be trained. In the event of there being too many volunteers the required numbers are to be selected by the brigade majors. If there are too few the required numbers will be posted by the area officer in consultation with the brigade major. Persons forbidden by the doctrines of their religion to bear arms shall, as far as possible, be allotted to non-combatant duties. On the 1st July, 1913, recruit training commences in the citizen forces for the 1895 class. Until the scheme reaches its full development the required numbers from rifle clubs will continue to be allotted annually to each unit in order to meet the requirements of mobilisation.

5. The Naval Scheme.—(i.) *Historical.* An outline of the development of the Australian naval policy will be found in Commonwealth Year Book No. 3, pp. 1060, 1061. For the more effective coastal defence of the Commonwealth it was decided in 1909 to create a naval force, Australian in character, to replace the squadron heretofore maintained under the naval agreement with the British Government. Australia would thus have a navy, not merely a marine defence force. Engagements were entered into for the construction of torpedo boat destroyers. In March, 1909, the Commonwealth Government contracted for the construction of two of these at a cost of £81,500 each. The vessels arrived in Australian waters in December, 1910. A third vessel of the same kind, delivered in Australia in sections, and put together in Sydney, was commissioned in 1912. The price paid for the parts was £72,500. Arrangements were also made for the construction of vessels in Australia. Skilled artisans were despatched from Australia to gain practical experience in the building of the vessels, and crews were specially trained for the service of them when completed.

(ii.) *Development of the Australian Navy.* The policy of development has continued with but slight variations in the proposals, despite three recent changes of Ministry.

A member of the Ministry, accompanied by naval and military expert advisers, attended the Imperial Defence Conference in London. The principal object of his mission was to concert with the other representatives as to the best measures to be taken to meet a common menace, particularly in the Pacific, where there must always be an outlet for Australian trade. The position was accepted that the burden of defence must in future be borne, not by part, but by the whole of the Empire, and therefore Australian plans and preparations must have the safety of the whole in view. As a fuller Imperial partnership is indispensable to the future security of the Imperial fabric, so a definite place in the Pacific must be allotted to Australia, as to other members of the Empire. It was agreed that Australia should provide a fleet unit, consisting of an armoured cruiser* of the *Indomitable* class, three unarmoured cruisers of the *Bristol* class, six destroyers of the improved "River" class, and three submarines of "C" class †; also the necessary auxiliaries, such as docks and dépôt ships, for this fleet, which is to form a complete naval unit, and is to be one of the three divisions of the Eastern fleet. It was stated that the British Government might provide an addition to this fleet. The cost of construction at English prices would be about £3,750,000, and the estimated annual cost about £750,000. Of this sum the Imperial Government offered to contribute £250,000, but the Commonwealth Government decided to bear the whole cost.

The first instalment of the Australian fleet unit consists of the destroyers already constructed. One was launched at Govan-on-the-Clyde, on 9th February, 1910; a second at Dumbarton on 9th April following. The vessels are named after Australian rivers, those launched in Britain having been christened *Parramatta* and *Yarra*. They were commissioned in September, 1910, as ships of the Royal Navy, and left Portsmouth on 19th September on their voyage to Australia. Crews had been sent from Australia to man the destroyers, and the Admiralty loaned 30 ratings to furnish the complements. The Admiralty also arranged for the cruiser H.M.S. *Gibraltar* to be in touch with the destroyers throughout the voyage. In December, 1910, the vessels arrived in Australia. A third destroyer, the *Warrego*, was shipped to Sydney in parts. She was re-erected at the Commonwealth dockyard, Cockatoo Island, Sydney, launched on 4th April, 1911, and commissioned on 1st June, 1912. These destroyers are each of 700 tons displacement, with a length of 245 feet; beam of 24 feet 3 inches; draft, 8 feet 11 inches; depth, 14 feet 9 inches. They have turbines, water-tube boilers and oil fuel, and have a legend speed of 26 knots. The armament consists of one 4-inch 30-pounder, three 12-pounders, and three 18-inch deck discharge tubes for torpedoes. The radius of action at cruising speed is nearly 3000 miles. The complement is 66 officers and men. The other three destroyers (to be named *Torrens*, *Swan*, *Derwent*) are being built at the Commonwealth dockyard in Sydney. The present annual naval subsidy (£200,000) is to cease as soon as the larger obligation is taken over. It will be seen from the table of expenditure (see § 6) that the amount for 1912-13 is £175,000—the reduction of £25,000 having been made in consequence of the withdrawal of some of the vessels of the British Australian Squadron (see § 2). While on the Australian station the ships will be under the exclusive control of the Commonwealth, both as regards movements and general administration, in time of peace, the *personnel* being subject to the King's regulations, and under naval discipline, with standards of efficiency, and opportunities for advancement, as in the Royal Navy. The battle cruiser (*Australia*) and the three 2nd class cruisers (*Sydney*, *Melbourne*, *Brisbane*), with the submarines, will complete the unit, which, with the approval of the Commonwealth Government, will pass under Imperial control whenever required for war purposes. It is to be manned as far as possible by Australians, supplemented by Imperial officers and men. A considerable number of the former is available, viz.—(a) those of the present permanent naval forces, and (b) those trained with sections of the British fleet. Provision is made in the *Naval Defence Act* 1911 for enlistment in the Permanent Naval Forces. A

* Now called "battle cruiser." † Since altered to two submarines of "E" class.

permanent naval college has been established, where the necessary instruction is imparted. The captain of the college was appointed on the recommendation of the British Admiralty, and other officers for the instruction of the cadets were nominated by the Admiralty. A site has been chosen for the college at Captain's Point, Jervis Bay. It will be equipped with all necessary workshops, machinery, etc. In order to expedite the training of officers, a temporary college was established at Geelong, and opened on 1st March, 1913. In May of that year the Cadet roll was 32. It is intended that there shall be interchangeability with the Royal Navy of officers and men, and also of ships. The British Admiralty invited tenders for the *Australia* in January, 1910. The first portion of the keel was laid on 23rd June, 1910, and she was launched on 25th October, 1911. The vessel will be commissioned in June, 1913, arriving in Australian waters in August. The ship is of the *Dreadnought* type, *Indomitable* class, about 19,200 tons, with turbine engines. Her speed is 26 knots, her armament eight 12-inch and sixteen 4-inch guns, and five torpedo tubes. She has an 8-inch armour belt amidships, and a 4-inch belt at the ends. The estimated total cost of the vessel is £1,800,000. The smaller cruisers, the *Melbourne* and *Sydney*, have been constructed in Great Britain. The keel of the *Sydney* was laid on 11th of February, 1911, that of the *Melbourne* on 4th April following. The *Melbourne* was launched at Birkenhead on 30th May, 1912, and arrived in Australian waters in March, 1913. The *Sydney* has also been launched, and is expected to arrive in August, 1913. These vessels are of 5400 tons displacement, armed with 6-inch guns, and costing about £450,000 each. The third cruiser, the *Brisbane*, is being built at the Commonwealth dockyard, Sydney. The keel has been laid, and the work is proceeding. The two submarines are being built in England, and it is anticipated that the vessels will be delivered late in 1913. Pending completion of the *Brisbane*, the *Encounter* has been lent from the Royal Navy for service in the Royal Australian Navy. The Admiralty has also presented the Commonwealth Government with the Cruiser *Pioneer*. This vessel was taken over by the Naval Board on 1st March, 1913. On the completion of her refit, she will be recommissioned with the crew of the *Protector* (augmented as necessary) for service as a naval reserve training ship. The *Protector* will then be re-commissioned for service as a tender to the Gunnery School.

(iii.) *Naval Reserves.* The naval reserves comprise (a) members of the Australian branch of the Royal Naval Reserve, (b) members of the Citizen naval forces, and (c) Senior naval cadets. The navy has first choice from amongst the trainees under the compulsory system.

(iv.) *Visit and Report by Sir Reginald Henderson.* At the invitation of the Government, Admiral Sir Reginald Henderson visited Australia to advise upon the best position for a central naval base, and the works necessary to make it effective; the positions for secondary bases for the service of a fleet, and their equipment for service in naval operations; also upon the location and character of the training schools for preparing *personnel* for the Australian naval service. The Admiral was also requested to report and advise on any other naval matters upon which he might care to express an opinion, and generally, in regard to all the measures to be taken in the formation of a fleet. After an inspection of various harbours, the Admiral propounded a scheme which he embodied in a report to the Government in March, 1911. It provides 52 vessels and 15,000 men; expenditure on construction, works, &c., £40,000,000, with an ultimate annual naval vote of £4,794,000. Six naval bases, and eleven sub-bases, are recommended.

The 52 vessels of the completed fleet would be divided into Eastern and Western divisions, and consist of 8 armoured cruisers, 10 protected cruisers, 18 destroyers, 12 submarines, 3 depôt ships, and 1 fleet repair-ship, the building of which would extend over 22 years. The *personnel* for this fleet, fully manned, would be about 15,000. Of the £23,290,000 initial cost of construction, the Commonwealth is already committed to

£3,500,000. The annual cost of *personnel* would be £601,000 in 1913-14, and would increase to £2,226,000 in 1933-4. Annual cost of maintenance of ships in commission would be £262,000 in 1913-4, rising to £1,226,000 in 1933-4. Annual expenditure on construction and maintenance of ships would increase from £2,349,000 in 1913-4 to £4,824,000 in 1932-3. The strength of the fleet would be 23 ships in 1918, 42 ships in 1923, 48 ships in 1928, and 52 ships in 1933. In the earlier years most of the crews would be obtained from Great Britain, but this would cease in the period 1923-8. A system of "wireless" stations is recommended, as well as the establishment of naval reserves, the erection of barracks, and the institution of a naval college.

(v.) *Proposals for Expansion.* The Australian Government has generally adopted Admiral Henderson's report, and naval expansion is proceeding generally on the lines therein laid down. In some important respects, however, departures will be made. It has been announced that it is the Government's intention to proceed with the construction of a second battle cruiser, thus anticipating by some years the Admiral's recommendation. In the matter of bases the report is concurred in, and action is being taken for the establishment of the various naval bases and sub-bases required for the fleet unit, work having already begun. All the seagoing ships of the fleet will have "wireless" installed. Recruiting centres have been opened, with excellent results.

(vi.) A vessel (*Sobraon*) purchased from the Government of New South Wales, has been fitted up as a boys' naval training ship (*Tingira*), and was commissioned on 25th April, 1912. The full capacity of the ship is 300, of whom 100 started training on 1st June, 1912, and others later. The age of entry is 14½ to 16 years, and the boys must engage to serve until they reach the age of 25. Upon medical certification of fitness, they are to be entered for service in the Royal Australian Navy. It is intended that the boys shall provide the *personnel* of the new fleet unit, 45 having already been transferred to the *Melbourne*. The training ship is thus a very important part of the new scheme. The strength of trainees in May, 1913, was 205.

(vii.) *Strength of the Commonwealth Naval Forces, 1913.* The following table shews the strength of the naval forces in February, 1913:—

**STRENGTH OF THE NAVAL FORCES (PERMANENT AND RESERVES),
1st FEBRUARY, 1913.**

Description of Force.	Number Borne.		Total.
	Officers and Men.	Cadets.	
Permanent*	2,102	...	2,102
Administrative and Instructional Staff ...	134	...	134
Reserves†	811	...	811
Reserves‡ ... ..	...	3,847	3,847
Total	3,047	3,847	6,894
Navy Office personnel ... ..	...	...	70
Grand total ... ..	...	...	6,964

* Seagoing. † Late Militia. ‡ Universal Trainees.

(viii.) *Ships of the Royal Australian Navy.* The following table shews the vessels of the Royal Australian Navy, completed and building:—

LIST OF SHIPS OF THE ROYAL AUSTRALIAN NAVY, APRIL, 1913.

Vessel.	Description.	Displacement.	Power.	Position.
		Tons.		
<i>Australia</i> ...	Battle cruiser ...	19,200	44,000 h.p.	Completing, Brit.
<i>Brisbane</i> ...	Light cruiser ...	5,600	22,000 h.p.	Building, Sydney
<i>Cerberus</i> ...	Turret ship ...	3,480	1,660 h.p.	Commissioned
<i>Childers</i> ...	1st class torpedo boat	...	...	"
<i>C'nness of Hopetoun</i> ...	" " "	...	...	"
<i>Derwent</i> ...	Torpedo boat destroyer	700	12,000 h.p.	Building, Sydney
<i>Encounter</i> ...	Light cruiser ...	5,880	12,500 h.p.	Commissioned
<i>Gazpundak</i> ...	Gunboat ...	360	400 h.p.	"
<i>Melbourne</i> ...	Light cruiser ...	5,600	22,000 h.p.	"
<i>Paluma</i> ...	Gunboat ...	360	400 h.p.	"
<i>Parramatta</i> ...	Torpedo boat destroyer	700	12,000 h.p.	"
<i>Pioneer</i> ...	Light cruiser ...	2,200	7,000 h.p.	"
<i>Protector</i> ...	Gunboat ...	920	1,641 h.p.	"
<i>Swan</i> ...	Torpedo boat destroyer	700	12,000 h.p.	Building, Sydney
<i>Sydney</i> ...	Light cruiser ...	5,600	22,000 h.p.	Completing, Brit.
<i>Tingira</i> ...	Boys' training ship	1,800	...	Commissioned
<i>Torrens</i> ...	Torpedo boat destroyer	700	12,000 h.p.	Building, Sydney
<i>Warrego</i> ...	" " "	700	12,000 h.p.	Commissioned
<i>Yarra</i> ...	" " "	700	12,000 h.p.	"
<i>A E 1</i> ...	Submarine ...	800	1,750 h.p.	Building, Brit.
<i>A E 2</i> ...	" " "	800	1,750 h.p.	" " "

(ix.) *The Naval Station of the Commonwealth of Australia.* The following are the limits of the Naval Station which, after 1st July, 1913, will be controlled by the Commonwealth Government, acting through the Naval Board:—On the North: From 95 degrees East longitude by the parallel of 13 degrees South to 120 degrees East longitude; thence North to 11 degrees South latitude; thence to the boundary with Dutch New Guinea, on the south coast, in about longitude 141 degrees East; thence along the coast of British New Guinea (Papua) to the boundary with German New Guinea, in latitude 8 degrees South; thence east to 155 degrees East longitude. On the East: By the meridian of 155 degrees East longitude to 15 degrees South latitude; thence to 28 degrees South latitude on the meridian of 170 degrees East longitude; thence south to 30 degrees South latitude; thence west to the meridian of 160 degrees East longitude; thence south. On the South: By the Antarctic Circle. On the West: By the meridian of 95 degrees East longitude.

6. Expenditure on Defence.

1. **Expenditure, 1906-7 to 1912-13.**—The following table gives the expenditure of the Department of Defence from 1906-7 to 1911-12, and the estimate for 1912-13:—

EXPENDITURE ON DEFENCE, 1906-7 to 1912-13.

Branch or Department.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13. Estimate
	£	£	£	£	£	£	£
Administrative—Central Administration ...	19,246	21,913	23,884	26,366	†104,740	†289,558	†249,142
Naval Forces ...	50,200	54,069	59,251	63,143	96,291	248,738	659,378
Military Forces ...	535,178	577,627	625,600	853,420	947,948	1,172,871	1,603,880
Rent, Repairs, & Maintenance	27,386	32,023	29,798	29,621	42,782	46,765	55,910
Additions and New Works ...	35,171	46,968	58,814	81,480	177,623	244,520	509,342
Defence Arms, Equipment, &c.	159,968	143,950	47,206	196,481	273,387	561,596	544,450
Audit Office ...	802	810	960	954	1,140	1,180	1,304
Pensions & Retiring Allowances	974	974	1,017	781	965	2,269	1,180
Supervision of Public Works by State Officers ...	521	700	822	1,046	3,767	2,905	2,300
Naval Agreement ...	200,000	200,000	200,000	200,000	200,000	200,000	175,000
Miscellaneous "Other" ...	6,329	5,710	8,238	21,589	282	...	...
Fleet Unit ...	...	...	...	60,000	1,135,000	1,108,171	1,196,829
Naval Works & Armament ...	...	...	...	...	24,780	88,696	318,050
Interest and Sinking Fund on Transferred Properties ...	...	...	...	...	...	162,132	121,599
Miscellaneous ...	...	...	...	...	...	638	...
Total ...	1,035,795	†1,084,744	1,050,590	1,534,881	3,008,705	4,080,039	5,438,364

* In addition, the sum of £250,000 was paid into trust fund for harbour and coast defence.

† Includes establishments under the control of the Central Administration.

2. **Expenditure Compared with Various Countries.**—The total expenditure on defence and the expenditure per inhabitant, according to the latest available estimates, are, in the countries indicated, as follows:—

EXPENDITURE ON DEFENCE—VARIOUS COUNTRIES.

Country.	Year.	Army.	Navy.	Total.	Per Inhabitant.	
		£	£	£	s.	d.
Great Britain ...	1911-12	27,690,000	44,392,000	72,082,000	31	9
Germany ...	1912-13	38,526,000	22,861,000	61,387,000	18	9
France ...	1912	36,767,000	17,070,000	53,837,000	27	5
Italy ...	1911-12	16,207,000	7,809,000	24,016,000	13	9
Austria-Hungary ...	1911	15,315,000	2,861,000	18,176,000	7	4
Switzerland ...	1912	1,765,000	...	1,765,000	9	4
Russia ...	1911	48,268,000	10,826,000	59,094,000	6	7
Spain ...	1912	7,582,000	2,716,000	10,298,000	10	5
Norway ...	1911-12	836,000	317,000	1,153,000	9	7
Sweden ...	1912	3,151,000	1,492,000	4,643,000	16	5
Denmark ...	1912-13	1,098,000	620,000	1,718,000	12	3
Holland ...	1912	2,525,000	1,697,000	4,222,000	14	0
Belgium ...	1912	2,594,000	...	2,594,000	6	10
United States ...	1912	34,840,000	26,206,000	61,046,000	12	10
Canada ...	1910-11	1,410,000	...	1,410,000	3	11
Japan ...	1911-12	7,637,000	4,074,000	11,711,000	4	6
Australia ...	1912-13	3,089,000	2,349,000	5,438,000	23	10

§ 7. The War Railway Council.

1. **The Constitution of the Council.**—It was suggested by Lord Kitchener that a War Railway Council should be appointed to secure co-operation between the Commonwealth Defence Department and the States Railway Departments in regard to concentration and mobilisation of troops. A conference, whose members comprised staff-officers of the Commonwealth forces and the chief railway commissioners of the States, was held in Melbourne in February, 1911, under the presidency of the Minister of Defence, and in March the report was made available. The decisions were embodied in a series of twenty resolutions. It was recommended that the War Railway Council should be constituted of eleven members as follows:—The quartermaster-general as president; the senior officer of the engineer and railway staff corps of the Commonwealth railway system and of each State railway system, the Commonwealth consulting military engineer, and two representatives of the naval and military forces as members; and a military officer as secretary. An engineer and railway staff corps was proposed, consisting at its commencement of 48 members, composed of officials of the Commonwealth and State Government railways holding honorary military rank.

2. **Duties in Time of Peace.**—The duties of the council in time of peace would be generally to furnish advice to the Minister of Defence on railway matters, and particularly (a) to determine the method of supplying information to, and obtaining it from, the various railway departments; (b) to suggest regulations and instructions for carrying out movements of troops; (c) to suggest the method of organising railway staff officers in time of war, to act as intermediaries between the various railway authorities and the

roops; (d) to consider the question of extra sidings, loading platforms, etc., and proposals towards unification of gauges; (e) to suggest the organisation and system of training of railway troops when the development of universal training supplies sufficient personnel whose ordinary employment is railway work; (f) in time of war to advise also on questions of mobilisation.

3. Control of Railways in War.—In times of war, the chief commissioner or general manager of any railway system of which the Commonwealth Government assumes control should be appointed Director of Railways, and should have command of "Railway Control Officers" to be specially appointed as intermediaries acting between the railway administration and the troops. The chief duties of these control officers would be (a) to facilitate the transport of troops, animals, and material; (b) to act as channels of communication between the military authorities and the technical railway personnel; (c) to advise the local military authorities as to the capacity and possibilities of the railway; (d) to bring to the notice of the Director of Railways any means by which the carrying power of the railway may, for military purposes, be increased.

4. Uniform Railway Gauge.—The Council recommends the adoption of a uniform gauge of 4 ft. 8½ in. on the lines linking up the capitals between Brisbane and Adelaide and also on the proposed transcontinental line from Kalgoorlie to Port Augusta, the cost of conversion to be shared upon a basis to be determined between the Commonwealth and the States.

5. State Governments' Approval.—With the exception of the question of uniform gauge, the State Governments have fallen in with the recommendations of the Council. The gauge question is apart from the general scheme, and is under discussion; the 4 ft. 8½ in. gauge has been decided on for the transcontinental line. The Council was formally established as an adjunct of the Defence Department in December, 1911, and the chief appointments have been made. The establishment is as follows:—14 colonels, to be drawn from railway commissioners and general managers (Commonwealth 3, New South Wales 3, Victoria 3, Queensland 2, South Australia 1, Western Australia 1, Tasmania 1; and 45 lieutenant-colonels, to be drawn from the maintenance, traffic, transportation, locomotive and electric branches (Commonwealth 7, New South Wales 7, Victoria 7, Queensland 8, South Australia 4, Western Australia 7, Tasmania 5). Railway Commissioners are rated as commandants.

§ 8. Relation to the Empire.

During the New Zealand wars many colonists served with the British forces, their service generally being purely as individuals. At the outbreak of the war, the *Victoria*, a steam sloop of 455 tons register, with an armament of seven 32-pounders, and a crew of 95, a large percentage of whom had been in the Royal Navy, was offered by the Government of Victoria to the Imperial authorities for service in New Zealand waters. The offer was accepted, and the vessel proceeded to Auckland, calling *en route* at Hobart, where she took on board part of the 40th Regiment (Imperial). The *Victoria* was employed continuously in transport and various operations along the coast until the termination of the war. In 1885 a field battery, an infantry battalion, and an ambulance corps, numbering in all 770, with 218 horses, left New South Wales to take part in the Suakin campaign. Lord Wolseley's despatch of 15th June, 1885, reads:—"The result was so satisfactory that I trust the noble and patriotic example set by New South Wales may, should occasion arise, be followed by other colonies."

In 1899 the outbreak of war with the Boers led to the several colonies offering contingents. This service was continued when, on 1st March, 1901, the control of the

defence forces passed over to the Commonwealth. Besides the troops officially organised, many Australians served as individuals in the campaign. The following table shews the strength of the military contingents sent at various times from Australia to South Africa:—

STRENGTH OF MILITARY CONTINGENTS SENT FROM AUSTRALIA TO SOUTH AFRICA.

State.	State Troops at State Expense.			State Troops at Impe- rial Expense.			Commonwealth Troops.			Grand Total.		
	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.
New South Wales ...	160	3,217	3,135	76	1,308	1,443	78	1,271	1,294	314	5,796	5,872
Victoria ...	47	751	830	77	1,569	1,877	69	1,052	1,118	193	3,372	3,825
Queensland ...	39	694	868	73	1,346	1,603	37	699	736	149	2,739	3,207
South Australia ...	20	326	258	46	644	696	23	467	490	89	1,437	1,444
Western Australia ...	18	331	269	34	540	608	15	291	306	67	1,162	1,183
Tasmania ...	6	173	58	17	358	422	13	290	303	36	821	783
Total ...	290	5,492	5,418	323	5,765	6,649	235	4,070	4,247	848	15,327	16,314

There were, in addition, several special service officers attached, at the request of the colonial Governments, to the British forces; these officers served with the Imperial troops with a view to aiding the development of the Commonwealth forces, particularly in regard to the routine and administration of troops on service.

The Home Government also accepted the offer of contingents from Australia on the outbreak of the Boxer rebellion in China. Naval volunteers were furnished by New South Wales and Victoria, and South Australia equipped a gunboat for the Imperial service. The strength of the New South Wales contingent was 260, and that of the Victorian 200, of all ranks.

§ 9. University Course in Military Science.

Following upon the endowment by the Sydney University of a Chair of Military Science, a curriculum, to extend over a period of three years, was arranged to commence in March, 1907. Completion of the course entitles the student to a diploma in military science, and students not completing it receive certificates for any courses in which they have given satisfaction.

The courses for the first year are Military History and Science I. and Military Engineering. In the former subject ten lectures are given in military history and ten in strategy, and in the latter there are ten lectures with five days' practical instruction. In the second year the subjects are Military History and Science II. and Military Topography. The former comprises ten lectures in military history and ten in Imperial defence. In topography ten lectures and seven days' practical instruction make up the course. The subjects for the third year are Military History and Science III. and Military Organisation and Law. Ten lectures in military history are joined with ten in tactics to make up the former, while there are ten lectures in the latter course.

The lectures for diploma are given at the Sydney University during Lent and Trinity terms. Short continuous courses of instruction in military subjects for the benefit of officers of the permanent and citizen forces are also arranged, the lectures being delivered during Michaelmas term.

§ 10. The Defence Forces of New Zealand.

The natives of New Zealand have generally shewn themselves well disposed to the British colonists, but in 1845-8 and 1860-70 there were native wars. In these, many of the tribes fought for the Colonial Government. Colonists joined with the Imperial troops in the campaign that began in 1845. In October, 1847, a detachment of Imperial soldiers arrived, under an agreement to perform garrison duty for a few days each year for seven years, and to be constantly in readiness for military service if required, in return for which each soldier received an acre of land with a cottage thereon. The New Zealand Fencibles were also constituted during the first Maori war. In 1860 volunteer forces were raised to fight with the Imperial troops. Military settlers were also enrolled in Australia and other places for service in New Zealand. During the war the Imperial troops were withdrawn, the Colonial Government undertaking its own defence. After the conclusion of the war, part of the field force was organised into a permanent artillery unit. The defences of the Dominion are now constituted under Acts of 1886, 1900, 1906, 1907, and 1909. In 1882 the strength of the forces maintained was 7367—made up of 732 cavalry, 907 artillery, 380 engineers, and 5348 infantry. The colony furnished 150 (approximately) officers and 4850 men for the South African war.

The New Zealand defence forces consist of the Permanent and the Territorial bodies. The former comprise the Staff Corps (Officers), the Permanent Staff (warrant and non-commissioned officers), and the Royal New Zealand Artillery (field and garrison). The Territorial forces are: Mounted Rifles (twelve regiments); Field Artillery (nine batteries); Garrison Artillery (nine companies); Engineers (four companies); Railway Corps (two battalions); Infantry (seventeen battalions); Signal Corps (eight companies); Army Service Corps; Post and Telegraph Corps; Medical Corps (eight field ambulances); Veterinary Corps; Rifle Clubs; and Senior Cadets. The permanent forces are at all times liable for foreign service; the territorial forces only for home service; the senior cadets are not liable for active service.

For the purpose of decentralisation the Dominion is divided into four military districts, these are further subdivided into area-groups and areas.

Liability for service is enacted in the Defence Act and regulations. These provide for the gradual military training of every male from the age of 12 to the age of 25, after which service in the Reserve up to the age of 30 is required. There are no distinctions and no exceptions, except physical unfitness. Persons with conscientious objections to fighting are to serve in non-combatant branches.

As junior cadets, from 12 to 14, all boys undergo a course of elementary military training (chiefly physical) under the Education Department. At 14 they are transferred to the senior cadets, remaining in that division till 18, and performing regular military work, though not liable for active service. At 18 active service in the regiments begins, and continues to the commencement of the reservist period, which extends from 25 to 30, during which time active service in the regiments may be demanded in case of war or other national emergency. A secondary reserve to complete the ranks of the territorial force, after its own reserve has been used up, is furnished by the rifle clubs. Registration of senior cadets for service is compulsory at the age of 14. A register is also kept of all males under the age of 22.

The numbers of territorials and senior cadets registered up to March, 1912, for military training and not then posted to units, together with those already serving, are shewn in the following table:—

Territorials, now serving (under 21 years)	...	...	...	6,309
Registered for enrolment	...	...	...	22,214
Senior Cadets (including those serving)	...	...	...	30,560
Total	...	...	...	59,083
Members of territorial force over age desirous of continuing service	...	...	...	2,862

The training is strictly territorial and carried out (except camp training) within reach of home, and at convenient times. A minimum is laid down, and includes seven days' camp, a prescribed course of musketry and gunnery, and field training.

The establishment of the territorial force is 30,000. It is organised in field and coast defence units, and is to be fully armed and equipped according to the most modern standards. The members are uniformed by the State, and paid and rationed during the annual camp. The training is in the hands of regimental officers, assisted by the officers, and warrant and non-commissioned officers of the permanent forces. Officers are drawn from the ranks on the recommendation of commanding officers, and are appointed, promoted, and retired in accordance with definite regulations calculated to insure their efficiency and status.

The senior cadets are instructed in companies of infantry. In the appointment of officers, and for general disciplinary purposes, the military authorities co-operate with headmasters and the heads of other recognised organisations.

Members of the Reserve are borne on the reserve lists of their late unit, and parade for two half-days annually with some part of that unit. The secondary reserve (members of rifle clubs) carry out each year a prescribed course of musketry.

The New Zealand Staff Corps will ultimately consist of officers who have been trained as cadets in the Royal Australian Military College at Duntroon. Ten of such cadets are nominated annually.

Arrangements have been made with the Imperial Army Council for the selection (on interchange) of officers required to fill vacancies in the Staff Corps.

Administration and control is in the hands of the Council of Defence.

The following table gives the military expenditure of New Zealand from 1906-7 to 1911-12:—

MILITARY EXPENDITURE, NEW ZEALAND, 1906-7 to 1911-12.

Year	...	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
Expenditure		£151,431	£174,670	£193,976	£188,950	£212,280	£408,043

In addition, the expenditure on naval defence was £100,000 in 1909-10 and 1910-11; and £40,000 in previous years.

SECTION XXIX.

PAPUA (BRITISH NEW GUINEA).

§ 1. New Guinea.

1. **Geographical Situation of New Guinea.**—New Guinea, frequently described as the largest island in the world, lies to the north-east of Australia, between $0^{\circ} 25'$ and $10^{\circ} 40'$ S. latitudes, and between $130^{\circ} 50'$ and $150^{\circ} 35'$ E. longitudes. Its estimated area exceeds 300,000 square miles, the greatest length being 1490 miles and the greatest breadth 430 miles.

2. **Discovery.**—The island was probably sighted by Abreus in A.D. 1511. The first visit by Europeans was apparently either that by the Portuguese Don Jorge de Meneses on his way from Goa to Ternate in 1526, or that by the Spaniard Alvaro de Saavedra in 1528. In 1606 Torres, having parted company with De Quiros at the New Hebrides, sailed, on his way to the Philippines, through the strait which separates the island from Australia, and which now bears his name.

3. **Colonisation.**—Little progress was made for many years in exploration and settlement. First the Portuguese, and afterwards the Dutch, who to a great extent replaced them as the principal European traders in the East, seem to have jealously excluded other traders and adventurers, and to have kept the knowledge of their discoveries to themselves. The coasts were visited by Roda, Schouten, Lemaire, Tasman, Dampier, Torres, Bougainville, and Cook; but the difficulties of navigation, the savagery of the islanders, and the tempting fields for enterprise in the more temperate regions further south, diverted the energy of traders and voyagers. Forrest describes a voyage by himself in 1774. In 1793, New Guinea was annexed by two commanders in the East India Company's service. Since that date the Dutch have made extensive surveys of the western portion, and the British and Germans have occupied and colonised the eastern.

4. **Partition.**—These three powers have agreed to the partition of New Guinea, each having suzerainty over islands adjoining its own territory. The whole of the portion west of the 141st degree of latitude, comprising about 150,000 square miles, or nearly half the island, belongs to the Dutch. The eastern half is divided in almost equal portions between Great Britain and Germany, the area possessed by each (with adjacent islands) being about 90,000 square miles. An Anglo-German boundary commission, appointed for the purpose of defining the boundary between the territories of the two nations, started operations on 26th December, 1908, and completed the field-work on 27th October, 1909. The total length of boundary delimited was $66\frac{1}{2}$ miles. The work was both important and difficult. For a considerable portion of the survey, the country was exceedingly rough and mountainous, and the natives hostile. In one instance, the line was carried over a range at an elevation of 11,110 feet. The Dutch colony forms part of the residency of Ternate in the Moluccas, and has not been extensively developed. The German protectorate, where considerable commercial development has taken place, includes the northern part of the eastern half of the mainland, known as Kaiser Wilhelm's Land, and the large islands of the Bismarck Archipelago and the Solomon Group, as well as nearly 200 smaller islands. The south-eastern portion of New Guinea, nearest Australia, is British, and a dependency of the Commonwealth of Australia.

§ 2. The Australian Dependency of Papua.

1. Australian Dependency of Papua.—Surveys of the east coast of New Guinea by Stanley, Yule, Blackwood, Moresby, and others, brought home to Queensland, and to Australia generally, the danger to her commerce which would result from foreign possession of the islands and coasts opposite to Cape York, and from the holding by a hostile power of the entrance to the splendid waterway inside the Barrier Reef. The mainland opposite the shores of Queensland east of the 141st meridian was therefore annexed by that colony in 1883; but the action was disallowed by the British Government. In 1884, however, a British protectorate was authoritatively proclaimed by Commodore Erskine over the region lying east from the 141st meridian as far as East Cape, with the adjacent islands as far as Kosman Island. In the year following an agreement with Germany fixed the boundaries between the possessions of the two countries, and to Great Britain was assigned the portion now known as Papua, lying between the extreme limits of 5° and 12° S., and 141° and 155° E. The British protectorate was subsidised by Queensland, New South Wales, and Victoria, and lasted till 4th September, 1888, when it was proclaimed a possession of the Empire. Its constitution was then that of a Crown colony, in association, however, with Queensland. Administration was in the hands of a Lieutenant-Governor, aided by an executive and a legislative council, and advised by a native regulation board. Port Moresby, on the south coast, was made the headquarters of the official establishment; a supreme court was established there, and magisterial courts in the districts; and an armed native constabulary force, numbering 221 on 30th June, 1912, under a European officer, was instituted for the maintenance of order. There were also, on the same date, 491 native village constables employed by the Crown.

2. Annexation by Commonwealth.—The territory was placed under the authority of the Commonwealth on 1st September, 1906, by proclamation issued in pursuance of Letters Patent of the 18th March, 1902, and was accepted by the Commonwealth by the Papua Act 1905, which came into force by virtue of the proclamation aforesaid. The transfer was made under the authority of section 122 of the Constitution (see p. 34 hereinbefore). The territory is now under the administration of the Commonwealth, but not included within it, and is divided into eleven magisterial districts.

3. Physical Characteristics.—Papua lies wholly within the tropics. The northernmost point touches 5° S. latitude; its southernmost portion, comprising Sudest and Rossel Islands, lies between 11° S. and 12° S. latitude. It is separated from Australia by Torres Straits. The length of Papua from east to west is upwards of 800 miles; towards either end the breadth from north to south is about 200 miles, but about the centre it is considerably narrower. The territory comprises also the islands of the Trobriand, Woodlark, D'Entrecasteaux, and Louisiade groups. The length of coast-line is computed at 3664 miles—1728 on the mainland and 1936 on the islands. The total area is about 90,540 square miles, of which 87,786 are on the mainland and 2754 on the islands. From the eastern end of the territory rises a chain of mountains, which forms a great central ridge and attains its greatest altitude, as it extends westwards, in the Owen Stanley Range, the highest points of which are Mount Victoria (13,200 feet), Mount Scratchley, the Wharton Range, and Mount Albert Edward. The western end of the possession is for nearly 300 miles generally low and swampy for some distance along the coast. The whole territory is well watered. The great mountains and a great portion of the lower country are covered with forest. The islands are mountainous, and, with the exception of the low coral islands of the Trobriand Group, part of Murua, and a few others of small dimensions, principally of volcanic formation. The highest is Goodenough Island, 8000 feet. The largest rivers of the mainland flow into the Gulf of Papua. The Fly River, with its tributaries, drains an extensive area of the territory of the Netherlands, as well as the British. Its length in British territory is about 620 miles, and it is navigable by a steam launch for over 500 miles. Other important rivers are the Turama and the Purari. There are many excellent harbours.

§ 3. Population.

The total white population of Papua on 30th June, 1912, was 1064, made up of 761 adult males and 194 adult females (adults being persons over 16 years of age), and 51 male and 58 female children. The following table gives the population of Papua for the last five years:—

WHITE POPULATION OF PAPUA, 1908 to 1912.

YEAR ENDED 30TH JUNE.

1908.	1909.	1910.	1911.	1912.
711	702	879	1,032	1,064

The chief occupations of whites are:—Government officials and employees, 89; planters (including managers and assistants), 107; and miners, 145.

It is not possible to make a reliable estimate of the number of natives, owing to the fact that much of the interior country is unexplored. It is generally assumed to be somewhere between 400,000 and 500,000. These speak many languages and dialects. The coloured population, other than Papuans, numbered on 30th June, 1912, 405. On the same date, half-castes, including Papuan half-castes, totalled 324. An Immigration Restriction Ordinance prohibits the immigration into the territory of persons who fail to pass the dictation test, or who are persons of bad character, or likely to become a charge upon the public. Exemptions may, however, be granted by the Lieutenant-Governor to persons of special skill whom it is desired to employ as overseers or foremen.

§ 4. Native Labour.

The rights of both employer and labourer are conserved by the Native Labour Ordinances. Service on the part of the native is voluntary, and he must be justly treated, and properly housed and fed. Employers may recruit personally, or obtain their natives through a licensed recruiter. Contracts of service must be in writing, entered into before a magistrate or other qualified officer, and the natives must be returned to their homes on completion of engagement. The labour question is complicated by the communistic system which prevails in the villages. Native custom demands that the friends or fellow-clansmen of the returned labourer receive a share in whatever he gets. The result is that the stimulus of individual interest is largely absent. During the period of service the recruiter or employer is personally responsible for the native's welfare. Refusal to work after engagement, or desertion from service, renders the labourer liable to imprisonment. On the other hand, a magistrate may terminate an engagement where unjust or harsh treatment by the employer is proved. The term of indenture must never exceed three years, and in the case of miners and carriers eighteen months is the limit, but re-engagements may be made. The magistrate must satisfy himself that the remuneration is fair, that the native is willing to undertake the service, and that there is no probability of unfair treatment or detention. Wages must be paid in the presence of an officer. A medicine chest, stocked with necessary drugs and first aid instruments, must be kept by all employers.

Just treatment, good food, and satisfactory remuneration for his labour have made the Papuan savage an excellent servant. With considerable natural aptitude and intelligence, he is able to understand readily what is required by his employer; consequently

native labour is very largely engaged by the Administration for the construction of roads and public works, and by the private employer for the clearing and upkeep of plantations. In some districts, however, the natives manifest a marked unwillingness to work. Actual ill-treatment of native employees may be said to be non-existent.

The number engaged under contract of service during the year ended 30th June, 1912, was 7963. In addition, there were more than 2000 persons employed who were not under contract of service. The available labour supply is inadequate for the development of the territory, and importation of Javanese coolies has been suggested.

§ 5. Production.

1. Papuan Products.—The products of the territory are obtained from its agricultural, forestal, fishing, mining, and manufacturing industries. There is a Papuan Court at the Imperial Institute, London, where, beside maps, handbooks and reports, a representative collection of products is shewn, additions being made to the exhibits from time to time. The industries of Papua are not numerous, but they are becoming more diversified. In many cases, some years must elapse before the raw material is available for commerce.

2. Agriculture.—(i.) *Soil and Rainfall.* The physical features of Papua are favourable to agriculture. Rich soils at varying elevations, and heavy and evenly-distributed rainfall, have ensured success in cultivating almost every tropical product of value. The territory comprises immense areas of rich alluvial and volcanic soils along the coast, and equally fertile land at elevations up to 6000 feet. Splendid rainfalls are recorded, except over a belt of country which runs back from the coast to the hills, and which has its dry season from May to November. This "dry" area is admirably suited for the production of tobacco, fibres, cotton, etc. There are fifteen meteorological stations throughout the territory. An economic museum and agricultural library have been established. By anticipating and removing many of the pioneering difficulties the Government has made the task of the colonist an easy one. The feature of recent years has been the marked cessation of speculative acquisitions of land, and the steady investment of capital in the development of large areas already acquired. One of the principal difficulties of planters is the heavy growth of weeds, and the Government has undertaken experiments with the planting of grasses to take the place of weeds, and so keep down the gross rank vegetation.

(ii.) *Plantations.* On 31st March, 1912, there were 192 plantations. Agricultural settlement has been mostly in the Central and Eastern Divisions, though plantations are rapidly spreading in other districts, particularly the South-Eastern and Western. The total area planted was 24,707 acres, or an average of 128 acres for each plantation. The principal plantation industries entered upon up to the present are cocoanuts, rubber, sisal hemp, and coffee. Secondary agricultural industries are the cultivation of bow-string hemp, cotton, vanilla, kapok, cocoa, tapioca, cinnamon, tea, and tobacco. The following table shews the areas under the different cultures (exclusive of maize and garden products) on 31st March, 1912:—

	Acres.
Cocoanuts	15,993
Rubber	4,496
Sisal hemp	2,757
Coffee	14
Other cultures	1,447
Total	24,707

(iii.) *Government and Native Plantations.* There are six Government plantations of cocoanuts and Pará rubber, with a total area of 230 acres. The natives are compelled by an ordinance to plant cocoanuts for food supply. It is estimated that the total area so planted amounts to 350,000 acres. New Government plantations are contemplated, the Government having decided to grant the territory a loan of £5000 a year for 5 years for Government plantations.

(iv.) *Government Nurseries and Experimental Stations.* Sylvicultural nurseries have been established with the object of supplying settlers with seeds and plants, which have been imported from the East and West Indies, Central America, tropical Australia, Ceylon, the Malay States, and the Solomon Islands. Attached to the nurseries are experimental stations, where the suitability of soil and climate for the different products is tested and correct methods of cultivation demonstrated. Four nurseries have been established, the total area being about 190 acres. From these, more than 102,000 Pará rubber trees and seeds, 417,000 sisal hemp plants, 600 bowstring hemp plants, as well as various other plants have been distributed to planters. A Government orchard, for supplying fresh fruit and vegetables, has been established at one of the experimental stations, and yields considerable quantities of European fruit-foods. One of the experimental stations has been incorporated in a new plantation.

(v.) *Indigenous Products.* There are many indigenous plants of great economic value. These comprise sandalwood and other timber trees, sugar-cane, cotton plants, rubber-both, vine, nutmegs, ginger, bamboos, palms, bananas, bread-fruit, edible nuts, sago-palms, fruits, and vegetables.

3. **Live Stock.**—On 31st March, 1912, the live stock in the territory consisted of 372 horses, 6 donkeys, 1286 head of cattle, 82 mules, 144 sheep, 585 goats, 95 pigs, and 5267 fowls. A Government stud farm has been established for the breeding of horses. Twenty-two stud mares were imported from Queensland in 1910, and 17 in 1911. A valuable asset to the stud is the possession of two stallions of good breeding. The introduction of rabbits, foxes, hares, and monkeys is prohibited.

4. **Forest Products.**—There is a large variety of useful timbers in Papua. Of 120 varieties that have been catalogued, 16 are adapted to resisting heavy strains, and are suitable for girders, railway waggons, etc.; 10 for railway carriage and coach building; 15 for joinery, lining, flooring, etc.; 14 for butter-boxes; 5 for boat building; 4 for piles; and 15 for cabinet work. Sandalwood is indigenous. It is largely used for cabinet work, and santal oil is distilled from its roots. Ebony is also produced for export. Rubber is a promising industry. There are considerable areas of native rubber (*Ficus Rigo*), but the planters generally prefer the imported Pará rubber. Guttapercha is obtained from species of *palaquium*, which grow on the hills. Drugs, dyewoods, and spices are also obtained from indigenous plants. Four saw mills have been established, but the output has not been sufficient to supply the local demand for building and other timber, and large quantities of sawn timber have been imported from Australia. About 474,000 superficial feet of log timber were exported to Australia in 1911-12, an increase over the previous year of 74,000 sup. feet. Contracts have also been made by residents to ship timber to Great Britain.

5. **Fisheries.**—Pearl-shell fishing occupies an important place in the industries of Papua. A considerable number of luggers is licensed, but the returns are mostly credited to Queensland, whose boundary approaches to within a few miles of the Papuan coast.

The species of tortoise which supplies the commercial tortoise-shell is also a native of the territory. Bêche-de-mer is found along the shores and reefs. There is a dugong fishery on the coast of the Western Division.

6. *Mining.*—(i.) *Variety of Minerals.* Minerals have been discovered in many places, and over an extremely wide range. Those discovered so far are—gold, copper, silver, tin, lead, zinc, cinnabar, iron, osmiridium, gypsum, manganese, sulphur, graphite, and petroleum. The discovery of the last named mineral is regarded as important, and steps are being taken to establish the industry. Of precious stones, only the topaz and beryl have been obtained. Large beds of apparently good coal also exist. A geologist was added to the Government service at the beginning of the year 1911.

(ii.) *Gold.* In 1878, gold, the existence of which in the territory had long been known, was unsuccessfully sought by a party of Australian miners. Ten years later the first field was discovered. Prospecting parties are subsidised by the Government. The search has now spread over every division, and finds have been recorded wherever the explorers have gone. There are 137 white miners and 1050 indentured labourers in Papua; the majority of the whites are working the Murna goldfield. The quantity and value of the gold yield for five years are given below:—

GOLD YIELD, PAPUA, 1907-8 to 1911-12.

1907-8.		1908-9.		1909-10.		1910-11.		1911-12.	
Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
ozs. 14,557	£ 51,024	ozs. 14,710	£ 51,108	ozs. 16,151	£ 60,181	ozs. 18,497	£ 68,803	ozs. 17,047	£ 60,608

Most of the rivers, with the exception of those flowing into the Gulf of Papua, have been declared open to gold-dredging, and good yields have been obtained from many of the rivers thus dredged.

The Gold-buyers Ordinance (Ordinance XVIII. of 1909) provides for the issue of licenses to buy gold, and imposes a penalty in respect to the purchase of gold by unauthorised persons. The total quantity of gold won to 30th June, 1912, was 339,584 ounces, valued at £1,227,555.

(iii.) *Copper.* A rich and extensive copper field has been proclaimed, and about 30 square miles of it are being worked. There are indications that the mineral exists over a much wider region. The ore shipments in 1910-11 were the largest since the field was discovered. The total amount shipped to date is 1849 tons, valued at £23,453.

(iv.) *Other Minerals.* Some good samples of galena (sulphide of lead) have been obtained. Small quantities of cinnabar (sulphide of mercury), graphite (or plumbago), osmiridium (or iridosmine), zinc, native sulphur and other minerals are also found.

A mineral laboratory and museum has been fitted up, and is available to prospectors and others interested.

7. *Manufactures.*—The chief native manufactures are pottery, canoes, fishing nets, mats, shell ornaments, stone implements, and decorated gourds.

§ 6. Statistical Summary.

1. Revenue and Expenditure.—The revenue and expenditure for 1911-12, under principal heads, are given below; also a summary covering a period of five years. In addition to the revenue collected during the year, amounting to £51,035, £30,000 was granted by the Commonwealth Government—£25,000 for ordinary expenditure, and £5000 for Government plantations; £3072 was brought forward from the previous year, being the unexpended balance. As compared with 1910-11, the principal increase in receipts was £5200 in the Customs Department. The chief decrease was £1190 in postal receipts. On the expenditure side, increases occurred in all departments.

REVENUE OF PAPUA, 1911-12.

Customs receipts	£37,751
Post Office	3,294
Native labour fees	1,415
Native hospital fees	668
Mining receipts	1,472
Sale of town allotments	486
Miscellaneous receipts	5,949
Total	£51,035

EXPENDITURE OF PAPUA, 1911-12.

Lieutenant-Governor and Civil List	£2,673
Government Secretary	32,444
Treasury & Postal Department	7,831
Lands and Agriculture	9,712
Public Works	19,438
Medical	6,036
Department of Native Affairs ...	1,633
Central Court	1,216
Legislative Council	189
Government Plantations Account	4,464
Total	£85,636

REVENUE AND EXPENDITURE OF PAPUA, 1907-8 to 1911-12.

Item.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Revenue	26,019	27,706	35,918	45,972	51,035
Expenditure	48,525	51,036	64,874	70,699	85,636

2. Imports and Exports.—The value of imports and exports for five years is shewn in the table below. The figures for 1907-8 and 1908-9 evidenced considerable expansion in trade over former years. Those for 1909-10 shewed an advance over 1908-9 of £25,497 in imports, and £20,907 in exports. In 1910-11 imports increased nearly 70 per cent. over the previous year, exports nearly 17 per cent. In 1911-12 the imports increased 16 per cent. over the previous year; exports decreased 14 per cent.

VALUE OF IMPORTS AND EXPORTS OF PAPUA, 1907-8 to 1911-12.

Particulars.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
	£	£	£	£	£
Imports	94,061	94,680	120,177	202,910	235,369
Exports	80,616	79,692	100,599	117,410	99,990
Total trade	174,677	174,372	220,776	320,320	335,359

The principal articles of import are foodstuffs, which in 1911-12 reached a total value of £80,576. The chief other imports in that year were:—Drapery and clothing, £27,953; hardware and ironmongery, £23,454; building material, £13,934; tobacco and cigars, £14,090; machinery, £8849; boats and launches, £7569; wine, spirits, and beers, £6490; live stock, £4891; oils and kerosene, £4641. The most notable increases over the previous year are:—Foodstuffs, about £23,000; hardware and ironmongery, nearly £10,000; and tobacco and cigars, nearly £3000. In each of the five years under review gold has formed considerably more than half the value of the total export. In 1911-12 the value of this metal exported reached £49,316. Other principal exports were:—Copra, £19,368; copper ore, £9681; pearls, £9605; bêche-de-mer, pearl and turtle shell, £4462; timber, £2685; rubber, £935; sandalwood, £259.

3. Postal and Shipping.—Considerable development has been shewn in means of communication—the postal returns, and the tonnage of vessels entered and cleared at ports, having largely increased. Particulars regarding postal matter are given hereunder:

POSTAL STATISTICS OF PAPUA, 1907-8 to 1911-12.

Year.	Letters.		Packets.		Newspapers.		Parcels.	
	Received.	Des-patched.	Received.	Des-patched.	Received.	Des-patched.	Received.	Des-patched.
1907-8	53,118	47,521	6,655	3,137	44,052	12,674	1,370	501
1908-9	57,055	51,259	8,608	3,997	48,070	14,320	1,566	467
1909-10	64,357	56,776	8,893	5,575	52,178	21,104	1,351	379
1910-11	84,274	83,617	13,712	8,011	63,170	25,520	2,279	542
1911-12	124,603	97,783	23,433	5,336	88,873	36,107	2,769	949

The following table shews the number, tonnage, and nationality of vessels entered and cleared at ports during the years 1907-8 to 1911-12:—

SHIPPING.—FOREIGN-GOING VESSELS ENTERED AND CLEARED AT PORTS OF PAPUA, 1907-8 to 1911-12.

Nationality.	Vessels.									
	Number.					Tonnage.				
	1907-8.	1908-9.	1909-10	1910-11	1911-12	1907-8.	1908-9.	1909-10	1910-11.	1911-12.
British...	243	233	234	246	291	127,108	119,252	123,402	123,461	135,015
German ...	20	18	18	16	16	56,664	50,574	62,976	51,880	51,496
Dutch ...	...	18	24	39	46	...	54,396	69,908	77,781	87,176
Total...	263	269	276	301	*355	183,772	224,222	256,286	253,122	*275,803

Including two vessels of other nationalities of 2116 tons.

§ 7. Land Tenure.

1. **Method of Obtaining Land.**—(i.) *The Land Laws.* The broad principles upon which the land laws of Papua are based are:—(a) No land can be alienated in fee simple; (b) the rental of the land leased is assessed on the unimproved value of the land, and is subject to reassessment at fixed periods.

(ii.) *Agricultural Lands (Class A).* The terms upon which the land may be leased are exceedingly easy to the settler. He can obtain a leasehold of the best class of agricultural land for any period up to ninety-nine years on the following conditions:—

- (a) Upon making application, a small deposit fee, ranging from £1 for 100 acres or less, to £5 for 1000 acres, and £5 for every additional 1000 acres or portion thereof, is payable. This is returned to the applicant when, having accepted the lease, he has cultivated a portion of the land.
- (b) No survey fees are charged to the lessee for areas not exceeding 100 acres, and no fee is charged for the preparation or registration of the lease.
- (c) If the lease is for not more than thirty years, rent shall be paid during the whole term at the rate of 5 per cent. per annum on the unimproved value of the land.
- (d) If the lease is for more than thirty years the rent payable is determined at 5 per cent. per annum of the unimproved value of the land, but no rent is payable for the first period of ten years.

The unimproved value of the land is to be appraised every twenty years during the currency of the lease, and the rent determined accordingly, but if on any appraisal the rent is raised by more than one-third, the lessee may disclaim the lease, and is thereupon entitled to receive compensation for his improvements.

The compulsory improvement conditions attached to agricultural leases are as follows:—

- (a) One-fifth must be properly planted with some approved plants within five years.
- (b) Two-fifths within ten years.
- (c) Three-fourths within twenty years.
- (d) During the remainder of the term three-fourths of the suitable land must be kept properly planted.

Provided always that, if at any time during the first five years of a lease it appears to the Land Board that reasonable efforts are not being made to fulfil the improvement conditions, they may recommend the Lieutenant-Governor to cancel the lease, and thereupon it shall be lawful for the Lieutenant-Governor, by notice in the *Gazette*, to cancel the lease accordingly.

All agricultural lands which have not been alienated by the Crown have been assessed under Section 13 of the Land Ordinance at an unimproved value of 5s. per acre. This appraisalment definitely fixes all land rentals for agricultural lands for twenty years as follows:—First ten years, free; second ten years, 3d. per acre per annum.

The rental of agricultural leases for the whole term of ninety-nine years cannot exceed the following amounts, subject to the clause *re* voluntary forfeiture and compensation:—First twenty years—first ten years, *nil*, second ten years, 3d. per acre; second twenty years, 4d. per acre; third twenty years, 5½d.; fourth twenty years, 7½d.; balance of lease, 9½d.

The maximum area which may be granted in any agricultural lease is 5000 acres.

(iii.) *Pastoral Lands (Class B).* Pastoral land, suitable for cattle and horses, can be obtained in easily accessible positions. All these lands are well watered and clothed with blady kangaroo, crowsfoot, couch, scurvy, and other grasses. The carrying capabilities of this land are estimated at forty head of cattle to the square mile. Application, deposits, fees, etc., are similar to those for Class A.

The compulsory improvement conditions attached to pastoral leases are:—

- (a) Ten head of cattle, horses, asses, mules, or fifty head of sheep, per square mile, must be on the land within five years.
- (b) Within ten years these numbers must be increased to twenty head of cattle or 100 sheep or goats to the square mile.
- (c) The land must be kept stocked to this extent for the remainder of the lease.

Provision for forfeiture of lease is the same as in the case of agricultural lands.

The rentals of pastoral leases for the whole term of ninety-nine years cannot exceed the following amounts, subject to the clause *re* voluntary forfeiture and compensation:— First twenty years—first ten years, *nil*; second ten years, 1s. per 100 acres; second twenty years, 3s. 1½d. per 100 acres; and increasing by one-third for every succeeding twenty-year period. Pastoral lands must be “proclaimed” before leasing.

(iv.) *Residence Leases.* Leases of Crown lands not included in any town may be granted for residence purposes. The area is not to exceed five acres, with annual rent not less than 10s. per acre; improvements as prescribed are to be effected, and the land fenced.

(v.) *Special Leases.* Leases of Crown lands may be granted for the erection of quays, wharfs, storehouses, factories, etc. The area is not to exceed 25 acres, and the period of the lease is limited to 25 years. Conditions as to rent, royalties, and improvements are to be carried out as prescribed.

(vi.) *Sales of Leases.* Permission may be given to sell, by auction or by tender, leases other than agricultural and pastoral, for special reasons.

(vii.) *New Conditions in Leases.*—With a view of attracting pioneer settlers, an ordinance was passed in 1906 under which leases were granted on very liberal terms. No rent was payable for the first ten years, and the heavy expense of survey was borne by the Government. In November, 1909, it was decided that all future applicants for land exceeding 100 acres in extent would be required to pay the cost of survey. It was also enacted that rent should be payable from the commencement of all leases granted after 1st June, 1910, if they exceeded in area 1000 acres.

2. *Land Tenures.*—On 30th June, 1912, the lands of the territory were held as follows:—

	Acres.
Area of land held by the natives	56,563,582
Area of Crown land	1,023,049
Area of freehold land	26,547
Area of leasehold land	332,422
Area of territory	57,945,600

Since the operation of the Papua Act, private sales of land in the territory have practically ceased. The Government buys from the natives, and then leases to planters, who are forbidden to have direct dealings in land with Papuans. The development in leasehold tenures may be seen from the following table:—

TOTAL AREA HELD UNDER LEASE, 1906-7 to 1911-12.

Year ended 30th June.	1907.	1908.	1909.	1910.	1911.	1912.
Land held under lease ... acres	48,002	242,395	337,803	363,425	364,088	332,422

In 1911-12, the area of leases granted was 5850 acres; that of leases expired, revoked, and forfeited was 24,316 acres. Further, recent surveys have shewn that applicants for leases in many cases over-estimated the areas; this constitutes a further shrinkage of 13,200 acres. Leases of unimproved areas have, after a reasonable time has been allowed in which to make a substantial start in clearing and planting, been forfeited. There has been steady development in agriculture through the adoption of stringent safeguards against purely speculative acquisitions of land. During 1911-12, the area of land acquired by the Crown from the natives was 26,565 acres.

The total area surveyed in the Territory is 25,353 acres of freehold, and 140,354 acres of leasehold.

§ 8. Progress of the Territory.

1. **Statistical View of Six Years' Progress.**—As already stated (§ 2, *supra*) the territory was placed under Commonwealth control on 1st September, 1906. The following table indicates the progress that has been made since that date:—

STATISTICAL VIEW OF SIX YEARS' PROGRESS, 1907-12.

Subject.	Year ended 30th June.	
	1907.	1912.
White population	690	1,064
Native labourers employed (exclusive of Crown servants) ...	2,000	10,000
Number of white civil servants	65	89
Armed constabulary	185	221
Village constables	401	491
Territorial revenue	£ 21,813	51,035
Territorial expenditure	£ 45,335	85,636
Value of imports	£ 87,776	235,369
Value of exports	£ 63,756	99,990
Area under lease acres	70,512	332,422
Tonnage of ocean-going vessels entered and cleared at ports ...	159,177	275,803
Area of plantations acres	1,467	24,707
Meteorological stations established	3	15
Gold Yield ounces	16,103	17,047
Copper ore shipped tons	137	994
Live stock in territory—		
Horses	173	*372
Cattle	648	*1,286
Mules	40	*82
Timber shipped sup. ft.	...	474,000

* On 31st March, 1912.

SECTION XXX.

PUBLIC HYGIENE.

§ 1. Introduction.

1. **General.**—Though the safeguarding of the public health as an organised department of administration is of comparatively modern growth, few branches of law have expanded more rapidly than the law relating to public health. The loss of potential wealth incurred through preventable diseases and deaths is of grave concern to the nation, and is a matter which has recently received an increased amount of attention both from the Commonwealth and State Governments and from the Health and other authorities in Australia. Numerous Acts of Parliament have been passed dealing with various aspects of the subject of public hygiene.

2. **State Legislation.**—In the first place there is a number of statutes, passed by the State Legislatures, such as Public Health Acts, Pure Food Acts, and Milk and Dairy Supervision Acts, providing, *inter alia*, for the constitution of Central Health Authorities, vested with definite powers, and furnishing the machinery necessary to enforce these powers. The general effect of this legislation has been to place local sanitary regulations and the execution of the Acts in the hands of the local authorities, subject to a general superintendence by a Government department.

3. **Commonwealth Legislation.**—Secondly, by the enactment of the Commerce (Trade Descriptions) Act 1905, the Quarantine Acts 1908 and 1912, and the Customs Act 1910, the Commonwealth Government has taken the first steps towards the exercise of its constitutional powers for the protection of the public health. All these Acts are administered by the Department of Trade and Customs.

4. **Scope of Enquiry.**—In addition to the statutes already referred to, account should be taken of a large body of legislation which relates more or less indirectly to the subject of public hygiene. It deals with a great variety of subjects and matters, such as factories, conditions of employment, mines, merchant shipping, prevention of fire, buildings, dangerous performances, contagious diseases, and other matters. There is also a number of statutes which have been passed with the object of protecting and supervising infant life. Owing to exigencies of space it is not possible in this section to do more than give a brief description of the scope and results of the legislation relating to public hygiene in its more important aspects.

§ 2. The Public Health Acts.

1. **General.**—The most important statutes relating generally to the subject of public hygiene are the Health Acts which have been passed in each State. While the scope of these Acts differs considerably in some of the States, there is a general similarity in their chief provisions and range of operation. The administration of the Acts is carried on by either a Central Board or a Commissioner of Health under Ministerial control, while their actual execution is imposed on local Boards of Health or on the local authorities constituted under the various Local Government Acts. Ordinarily the Central authority

has general supervisory powers over local Boards and authorities, and also has power to act in case of default by or in the absence of a local Board or authority as to any duty under the Act, and to recover all expenses incurred. The Central authority may also make regulations, and the central and local Boards may make by-laws for various purposes generally specified in the Health Acts. Generally it may be said that the chief functions of the Central Health authorities are:—(a) the collection and dissemination of useful information relating to health and the prevention of disease, and (b) to control, stimulate, and, where necessary, to supplement the efforts of the local authorities.

Inspectors are sent to make reports on the hygienic conditions of country towns or districts with a view to assisting the local authorities with advice, and keeping the central department posted as to the activity or otherwise of these various bodies.

Rating powers for sanitary purposes are conferred on local authorities by the Local Government Acts.

The general powers of local authorities under the Acts extend to a variety of subjects and matters, including:—sewers and drains, sanitary conveniences, scavenging, cleansing, privies and cesspools, abatement of nuisances generally, offensive trades, public buildings, dwelling-houses and lodging-houses, hospitals, mortuaries, cemeteries and burial grounds, prevention of adulteration of food and drugs, unsound food, pollution of water, supervision of abattoirs and dairies, prevention of infectious diseases, and infant life protection.

2. New South Wales.—The Department of Public Health is controlled by the Director-General of Public Health, and consists of various staffs—medical, bacteriological, chemical, veterinary, dairy inspection, meat inspection, sanitary, pure food, and clerical. It has under its supervision the State hospitals and asylums at Little Bay (Coast Hospital), Rookwood, Parramatta, Newington, Liverpool, Waterfall (sanatorium for treatment of consumptives), and the David Berry Hospital.

The work of the Department, briefly put, embraces all matters relating to public health and the general medical work of the Government; the Director-General of Public Health also holding the position of Chief Medical Officer of the Government. Its operations extend over the whole of the State.

The Board of Health has certain statutory duties imposed upon it by various Acts of Parliament, and the Director-General is President of the Board of Health. These duties consist largely in supervision of the work of local authorities (Municipal and Shire Councils), so far as that work touches upon public health matters connected with the following Acts:—Public Health Act 1902, Dairies' Supervision Act 1901, Noxious Trades Act 1902, Cattle Slaughtering and Diseased Animals and Meat Act 1902, Sydney Abattoir and Nuisances Prevention Act 1902, Pure Food Act 1908, and Private Hospitals Act 1908. The Board further possesses certain powers connected with public health matters under the Local Government Act 1906.

The Director-General of Public Health acts independently of the Board of Health as regards the State hospitals and asylums, and the various public hospitals throughout the State which receive subsidies from the Government.

It may be mentioned that the Board of Health is a nominee Board, created in 1881 and incorporated in 1894. The permanent head of the Department is the Under-Secretary of the Chief Secretary's Department.

In connection with the Pure Food Act 1908, the Director-General of Public Health has the assistance of an advisory committee (also nominee), of which he is the president, and on whose recommendation the Board of Health may make regulations prescribing food standards, prohibiting the manufacture or sale of food, etc., and for generally carrying out the purposes of the Act.

The Department also controls, on behalf of the Federal Government, the meat export trade of the State. A veterinary inspector is in charge, and has assisting him thirty-five qualified meat inspectors stationed at Glebe Island and at various slaughter-houses throughout the State.

3. **Victoria.**—In this State the Public Health Acts are administered by a Board composed of two members nominated by the Governor-in-Council and of seven members elected by the municipal councils. The medical and sanitary staffs of the Board consist of (a) the medical inspector, who is also chairman, (b) two assistant medical inspectors, (c) five port health officers, (d) five engineering inspectors, (e) one sanitary inspector, and (f) nine food inspectors. The main function of the Board is to enforce the execution of the Health Acts by the local municipalities, but it has been found advisable to supplement this supervisory function by an active policy of inspections as to the sanitary condition of various districts and the sampling of articles of food. The supervision of the sanitary condition of the milk supply is under the Dairy Supervision Branch of the Department of Agriculture. Acts administered by the Department of Public Health are:—The Health Act 1890, the Cemeteries Act 1890, the Cremation Act 1903, the Adulteration of Wine Act 1905, the Meat Supervision Acts 1900 and 1909, and the Pure Food Act 1905.

4. **Queensland.**—The Public Health Acts 1900 to 1911 are administered by the Commissioner of Public Health under the Home Secretary. The executive staff of the Department includes a health officer, an assistant-health officer, a medical inspector for North Queensland, a secretary and five clerks, nine sanitary inspectors, and six food inspectors, in addition to rat squads in Brisbane and the main outports, and a mosquito squad for the Brisbane metropolitan area. A northern office, in charge of the medical inspector for North Queensland, is located at Townsville. A laboratory of microbiology and pathology, in charge of a medical director, is controlled by the Department, and performs a wide range of microbiological work for the assistance of medical practitioners and the Department.

One function of the Department is to stimulate and advise local sanitary authorities on matters pertaining to the Health Acts, and, where necessary, to rectify or to compel rectification, at the cost of the local authority, of sanitary evils produced by local inefficiency or apathy. Its powers and responsibilities were widely increased by the Health Act of 1911, which, *inter alia*, enables definite action to be taken against mosquitoes, rats, and other noxious vermin liable to spread disease.

A scheme for the limitation of venereal disease in the metropolitan area has been recently put into operation in Brisbane under statutory powers. It includes compulsory notification, free treatment, and the free supply of salvarsan and its allies to all public hospitals. Compulsory segregation of venereally infective persons of either sex may be effected on occasion.

5. **South Australia.**—The Central Board of Health in South Australia consists of five members, three of whom (including the chairman) are appointed by the Governor, while one each is elected by the city and suburban local Boards and the country local Boards. The Health Act 1898 provides that the municipal and district councils are to act as local Boards of Health for their respective districts. There are 175 of these local Boards under the general control and supervision of the Central Board. A chief inspector periodically visits the local districts and sees generally that the Boards are carrying out their duties. There is also a chief inspector of food and drugs (under the Food and Drugs Act 1908), and a chief inspector of cattle, and there are nine other inspectors in outlying districts who are directly responsible to the Central Board.

6. **Western Australia.**—In this State the Health Act, 1911—which amended and consolidated the preceding Health Acts of 1898, 1900, 1902, 1904 and 1909—now operates as from 1st June of that year. By this Act the principal authority (under the Minister), the Commissioner of Public Health, who must be a duly qualified medical officer, possesses full power to act as he may deem necessary in relation to any matter concerning public health, and has authority to appoint persons to assist him in carrying out the provisions of the Act. Every municipal district becomes a health district within the

meaning of the Act, and the municipal councils thereof become the local health authorities. Each local authority is bound to carry out, within its district, the provisions of the Act. Local Boards of Health must not exceed seven members, who are appointed by the Governor for a term of three years, and are eligible for reappointment. A majority of the members (who must appoint one of their number as chairman), shall form a quorum, and all matters are decided by a majority of the members present, the chairman, in cases of an equality of votes, having a casting one.

7. **Tasmania.**—In this State a Department of Public Health, under the control of a Chief Health Officer, was constituted by the Public Health Act 1903. The department has four inspectors, but district health officers are not provided for. The number of local authorities under the Public Health Act has been reduced to fifty-one since the Local Government Act 1906 came into force. All parts of Tasmania are now furnished with the administrative machinery for local sanitary government.

§ 3. Inspection and Sale of Food and Drugs.

1. **Introduction.**—The importance of securing a pure and wholesome supply of food and drugs is recognised by both the Commonwealth and State Parliaments. Under the Acts referred to later, and the regulations made thereunder, the importation of articles used for food or drink, of medicines, and of other goods enumerated, is prohibited, as also is the export of certain specified articles, unless there is applied to the goods a "trade description" in accordance with the Act. Provision is made for the inspection of all prescribed goods which are imported, or which are entered for export.

(i.) *Commonwealth Jurisdiction.* Under Section 51 (i.) of the Commonwealth Constitution Act 1900, the Commonwealth Parliament has power to make laws with respect to trade and commerce with other countries and among the States. By virtue of that power, the Commerce (Trade Descriptions) Act, 1905, and the Customs Act, 1910, to which reference has already been made in another part of this book (see pp. 588, 590), were passed.

(ii.) *State Jurisdiction.* The inspection and sale of food and drugs is also dealt with in each State either under the Health Acts or under Pure Food Acts. There is, in addition, in the several States, a number of Acts dealing with special matters, such as the adulteration of wine and the supervision of meat. The sanitary condition of the milk supply is also subject to special regulations or to the provisions of special Acts; this subject is more particularly referred to in the next succeeding sub-section hereof.

(a) *General Objects of Acts.* The general objects of the Acts dealing with the inspection and sale of food and drugs are to secure the wholesomeness, cleanliness, and freedom from contamination or adulteration of any food, drug, or article, and for securing the cleanliness of receptacles, places, and vehicles used for their manufacture, storage, or carriage. The sale of any article of food or any drug which is adulterated or falsely described is prohibited, as also are the mixing or selling of food or drugs so as to be injurious to health.

(b) *Inspection and Analysis.* Power is given to any authorised officer to enter any place for the purpose of inspecting any article intended to be used as a food or drug and also to inspect articles being conveyed through the streets, by water or by rail. He may take samples for examination or analysis, and may seize for destruction articles which are injurious to health or unwholesome. Chemical analyses and bacteriological examinations are made by qualified officers. Special provision is generally made in the Acts with regard to the sale of preservatives and disinfectants.

(c) *Advisory Committees.* In New South Wales, Victoria, and South Australia Advisory Committees have been appointed for the purpose of prescribing food standards and for making recommendations generally with a view to carrying out the provisions of the Acts. The duty of enforcing these regulations is entrusted to the local authorities, but it is stated that up to the present comparatively few of the local councils seem to have realised the importance of guarding the food supplies of the people.

2. **New South Wales.**—Provisions as to the sale of food and drugs in New South Wales are contained in the Pure Food Act 1908 and in the regulations made thereunder. The administration and enforcement of these provisions are primarily duties of the Board of Health, but may, by direction of the Governor, be left to local authorities. Analyses are made by the Department of Public Health free of charge.

(i.) *Special Provisions.* The Act contains a number of special provisions. Drugs must comply with tests specified in the British Pharmacopœia, and packages of food must be labelled with description, weight, or measure of their contents. The advertising or sale of any injurious or useless food, drug, or appliance may be prohibited, as also may the sale of any substance as a disinfectant or preservative. A person selling prohibited articles may not be liable to penalties under the Act if he prove that he purchased such articles with a guarantee in writing that they were not adulterated or falsely described, that he had no reason to believe that the same were adulterated or falsely described, and that he sold them in the same state as when he purchased them. The person giving the guarantee must be a resident in New South Wales, or, if a company, must have a registered office in New South Wales. The Board of Health may require the council of any local authority to submit for analysis during each year not less than three samples of foods or drugs for each thousand persons of the population of its area.

(ii.) *The Advisory Committee.* The Pure Food Act 1908 provides for the constitution of an Advisory Committee on whose recommendation the Board of Public Health may make regulations prescribing food standards, prohibiting the manufacture or sale of food, or the use of appliances containing any specified substances, and for generally carrying out the purposes of the Act.

3. **Victoria.**—In this State the prevention of the adulteration of food and of the sale of unwholesome food is provided for by the Health Act 1890, as amended by the Adulteration of Wine Act 1900 and the Pure Food Act 1905 and regulations made thereunder. While differing considerably in detail, the general provisions of these Acts are in many respects similar to those of the New South Wales Act of 1908. The Meat Supervision Acts 1900 and 1909 specially deal with the supervision of the slaughtering of animals and the sale of meat in Victoria. The Pure Food Act provides, *inter alia*, for the establishment of a specially qualified Foods Standard Committee charged with the functions of formulating standards of purity, quality, and composition for articles of food and drugs. Various regulations as to both food and drugs have been made by this Committee. The Act requires explicit labelling of packages, and provides for the punishment, where possible, of the actual adulterator. The retail vendor is not penalised if it is clear that he has no guilty knowledge, and that he has taken reasonable precautions against committing an offence. A warranty or invoice may be available as a defence to any proceedings under the Acts, but if given by a person resident outside the State the defendant must prove that he had taken reasonable grounds to ascertain and did in fact believe in the accuracy of the statements contained in the warranty or invoice.

4. **Queensland.**—The Health Act Amendment Act of 1911 replaced the former statutory provisions relating to food purity as from 1st January, 1912. Power is given to local authorities in respect of food examination, but in practice the work is carried out almost solely by the special food staff of the Department of Public Health. Regulations

based on the findings of Interstate Conferences held at Sydney in 1910 and 1911, have been brought into operation. The administrative objective has been to avoid penalising the retail vendor if he has no guilty knowledge, and to so warn and educate all persons connected with the production or sale of foodstuffs generally, that no tangible excuse can exist for deliberate sophistication. Systematic analysis is carried on, and special effort is made to suppress the adulteration of milk. Export dairy produce is controlled by the Department of Agriculture and Stock. Subsequent convictions for offences against the food sections empower the Commissioner to publish the name and offence of the offender, and to post these particulars up on the offender's place of business for 21 days. Newspapers may also republish such notices without risk of action.

5. **South Australia.**—The inspection and sale of food and drugs is now chiefly contained in the Food and Drugs Act 1908, and in the regulations made thereunder; certain special matters, such as water and meat supplies, are dealt with in Part VII. of the Health Act 1898. An important provision of the Food and Drugs Act is the constitution of the metropolitan area as a single district, so that the sale of food and drugs generally, as well as the inspection and supervision of dairy premises and cattle in the metropolis, is under the control of one central body—the Metropolitan County Board. Another important provision of the Food and Drugs Act is the appointment of an Advisory Committee to fix standards of foods and drugs, and to draw up necessary regulations. In addition to dealing with the supervision of the milk supply and dairies, the Act provides for the inspection and analysis of foods, drugs, chemicals, spirituous liquors, patent medicines, and proprietary articles, for the inspection and examination of all animals offered for sale or slaughter, and for the licensing of ice cream and aerated waters manufacturers. A warranty given by a person resident in South Australia is available as a defence to any proceeding under the Act, if the defendant prove that he bought the article in the same state as sold. Proof of absence of knowledge of adulteration is a sufficient defence if the defendant could not by analysis or other adequate test have obtained that knowledge.

6. **Western Australia.**—The adulteration of food and unwholesome food is now dealt with under Part VIII. of the Health Act 1911. Each local authority (now constituted by this Act the local health authority) may, and when required by the Commissioner of Health must, appoint its own analyst, inspectors, and other officers necessary to carry out the provisions of the Act. Under the previous Health Act of 1898, fairly systematic inspection of various articles of food was carried on within municipal districts, the samples submitted for analysis consisting chiefly of milk, and it was found that the effective supervision of imported tinned meats requires constant attention. Inspection of alcoholic beverages is carried out by spirit inspectors appointed under the Licensing Acts.

7. **Tasmania.**—Though provision existed under the Public Health Act 1903 for the inspection and supervision of food and drugs, it would appear that prior to 1911 no systematic attempt at enforcement of food purity was made in Tasmania. The statutory powers which existed under the 1903 Act left these matters wholly in the hands of local authorities, and the Department of Public Health had no power to take samples for examination or analysis. In any action under that Act a defendant had to be discharged if he could prove absence of knowledge or that he bought the article in the same state as sold, and with a warranty. Under the Food and Drugs Act 1910, which came into force on the 1st of March, 1911, food and drug regulations are now placed under control of the Department of Public Health. The Act authorises the appointment of inspectors of food and drugs acting under the Chief Health Officer, or in the case of an inspector being a member of the police force, then under the Commissioner of Police, and any local authority may, and when called upon by the Chief Health Officer, must, appoint food and drug inspectors. Prosecutions have already taken place under this Act, but it is stated that its efficacy is likely to be seriously minimised by the lightness of the penalties imposed.

8. **Food and Drug Standardisation.**—With the object of securing uniformity of food and drug standards of the principal manufactured products sold in the Commonwealth, a conference, which was attended by representatives of the Commonwealth and all the individual States except Western Australia, was opened in Sydney on 8th June, 1910. The result of this conference was that several adoptions of standards of food and drugs, and labelling of articles for consumption were made, so as to obtain uniformity in the several States. The recommendations of the conference deal with a variety of matters and are too lengthy for inclusion in this publication. Among the most important may be mentioned the following:—(a) The addition to articles of food of preservative substances, being other than common salt, sugar, spice, wood-smoke, vinegar, and acetic acid, should be prohibited as far as possible, and should be permitted only in minimum proportions. (b) The addition to any form of milk of any preservative (except sugar) should be prohibited. (c) The addition of foreign or artificial colourings or flavourings should be avoided as far as possible, and when permitted should be declared.

§ 4. Milk Supply and Dairy Supervision.

1. **Introduction.**—Milk is pre-eminently the food which needs most careful protection at each successive stage of its production, carriage, storage, and delivery, from exposure to infection from extraneous matter. The problem of obtaining a pure and clean milk supply has accordingly, during the last few years, demanded an increasing amount of attention from the Health authorities, and in each State special laws and regulations have been passed governing the supervision of dairy farms and dairies.

(i.) *General Provisions of Acts and Regulations.* In general, it may be said that it is not lawful to sell or offer for sale any milk which is not fresh or wholesome, or which has been watered, adulterated, reduced, or changed in any respect by the addition of water or any other substance, or by the removal of cream. Regulations made under the Acts provide for the carrying-on of dairy farms, dairies, factories, and creameries, under proper and wholesome conditions; and supervisors and inspectors are appointed to enforce these provisions. Generally, the execution and enforcement of the Acts is left to the local authorities.

ii.) *Registration of Dairymen and Milk Vendors.* Dairymen, milk vendors, and dairy-factory or creamery proprietors are required, under penalty, to be registered. In some States registrations must be applied for before commencing to trade; in other States they must be applied for within a specified time after the premises are first used.

iii.) *Inspection of Premises.* Dairy inspectors employed by the central departments traverse the principal dairying districts, and inspect dairy premises, dairy herds, appliances, and utensils, and ascertain in what fashion the various local authorities carry out the duties imposed on them. Regulations and instructions are issued by the central departments for the information and guidance of local authorities, dairymen, milk vendors, and others, as to precautions to be observed in order to protect milk from contamination, and to ensure cleanliness as to the structural arrangements, dimensions and ventilation of premises, and as to the care and health of dairy cattle. If an inspector is satisfied that any premises or apparatus used therein are unclean, or unfit for the purposes of dairy produce, he may require the owner to put the same in a proper and wholesome condition.

iv.) *Notification of Diseases.* Every dairyman or milk vendor is required to report immediately any case of certain prescribed infectious diseases occurring in any human being engaged at or residing on his premises. It is the duty of the local authority to take care that communication between all persons belonging to the infected household and the milk business in all its details is prevented. Cases of notifiable diseases

occurring in animals at a dairy farm or dairy must also be reported immediately, and the owner must at once isolate the diseased animal. The sale of milk from an infected cow is prohibited, and, under certain circumstances, an inspector may order an infected animal to be branded or destroyed.

(v.) *Analysis of Dairy Produce.* The local authority generally has power to enter premises and to take away samples of the milk, cream, butter, or cheese there found, and of the water supply therein, for the purpose of examination or analysis.

2. Number of Dairy Premises Registered.—The following table shews the number of dairy premises registered and the number of cattle thereon in each State during the year 1911-12:—

NUMBER OF DAIRY PREMISES REGISTERED AND CATTLE THEREON, 1911-12.

Particulars.	N.S.W.	Victoria.*	Q'land.	S. Aust.*	W. Aust.*	Tas.
Premises registered	18,524	14,086	13,686	918	469	946
Cattle thereon	631,576	160,754	316,359	6,970	6,138	7,990

* Victoria for 1910-11, South Australia for 1912-13, Western Australia for calendar year 1912.

3. New South Wales.—The provisions of the Dairies Supervision Act 1901 extend to the whole of the Eastern and Central Divisions of this State and to all important dairying districts further inland. Other districts are brought under the operation of the Act by proclamation from time to time. Every dairyman, milk vendor, and dairy factory or creamery proprietor is required, under penalty, to apply for registration to the local authority for the district in which he resides, and also to the local authority of every other district in which he trades. Registrations must be applied for before commencing to trade and must be renewed annually.

4. Victoria.—The inspection and supervision in Victoria of dairies, dairy farms, dairy produce, milk stores, milk shops, milk vessels, dairy cattle, and grazing grounds are provided for by the Milk and Dairy Supervision Act 1905, administered by the Minister of Agriculture. Under the Health Act 1890 and the Pure Food Act 1905, however, the Department of Public Health is empowered to take samples of food (including milk, cream, butter, cheese, and other dairy products) for examination or analysis, and to institute prosecutions in case of adulterated or unwholesome food. By the end of the year 1909, eighty-seven municipal districts, comprising about one-sixth of the area of the State, had been brought under the operation of the Milk and Dairy Supervision Act. The municipal councils have the option of carrying out the execution of the Act themselves or of electing for execution by the Department of Agriculture; up to the present all the municipalities in which the Act has been proclaimed have elected for Departmental execution.

5. Queensland.—The control and supervision of the milk supply and of dairies and the manufacture, sale, and export of dairy produce in Queensland are provided for by the Dairy Produce Acts 1904 and 1911, administered by the Department of Agriculture and Stock. These Acts and the regulations made thereunder apply only to prescribed districts, which comprise the whole of the coastal district from Rockhampton down to the New South Wales border and the Darling Downs, Maranoa, Mackay, and Cairns districts.

6. **South Australia.**—The Food and Drugs Act, 1908, and the Regulations made thereunder (published in May, 1910), provide for the licensing of vendors of milk and the registration of dairies, milk stores and milk shops. The Metropolitan County Board carries out the requirements of the metropolitan area. In the country, the majority of local authorities have not made statutory provision for the licensing of vendors of milk and the registration of dairy premises; and, in consequence, the Central Board of Health provides for such under the Act. Reference has already been made (see § 3, 5 hereof) to the constitution of the Metropolitan County Board.

7. **Western Australia.**—In this State the inspection of dairy herds is under the control of the Department of Agriculture, while the supervision of dairy premises and of subsequent stages in the milk supply is carried out by the Health authorities. At the commencement of the year 1908 a campaign was instituted towards the elimination from dairy herds of tubercular cattle. This campaign took the form of the application to all the animals in each herd of the tuberculin tests and the isolation and slaughter of all re-acting animals.

8. **Tasmania.**—Under the Public Health Act 1903 it was the duty of local authorities to regulate the hygienic conditions of milk production and milk supply, and regulations dealing with milk, cream, and butter standards have been prescribed. Comprehensive by-laws for the registration and regulation of dairymen's premises existed in many districts, but outside the cities and a few towns it would appear that these were seldom enforced. These matters are now governed by the Food and Drugs Act 1910, which came into force on 1st March, 1911.

§ 5. Prevention of Infectious and Contagious Diseases.

1. **General.**—The provisions of the various Acts as to precautions against the spread and the compulsory notification of infectious diseases may be conveniently dealt with under the headings—(a) Quarantine; (b) Notifiable Diseases; and (c) Vaccination.

2. **Quarantine.**¹—Under the Commonwealth Quarantine Act 1908, the systems of State quarantine formerly in operation were abolished, and a branch of the Department of Trade and Customs, under the immediate control of a Director of Quarantine, was created on 1st July, 1909. An amending Quarantine Act was passed in 1912, correcting certain imperfections in the original Act, and conferring slight additional powers. As far as is at present practicable, uniformity of procedure has been established throughout the Commonwealth in respect of all vessels, persons, and goods arriving from oversea ports or proceeding from one State to another, and in respect of all animals and plants brought from any place outside Australia. In regard to interstate movements of animals and plants, the Act becomes operative only if the Governor-General be of opinion that Federal action is necessary for the protection of any State or States; in the meantime the administration of interstate quarantine of animals and plants is left in the hands of the States.

(i.) *Transfer of Quarantine Stations.* The transfer from the States to the Commonwealth of the quarantine stations, for the purposes of human quarantine, at the following places has been effected:—(a) *New South Wales.* North Head (near Sydney). (b) *Victoria.* Point Nepean (near Melbourne). (c) *Queensland.* Colnslie and Lytton (near Brisbane), Magnetic Island (near Townsville) and Thursday Island. (d) *South Australia.* Torrens Island (near Adelaide). (e) *Western Australia.* Woodman's Point (near Fremantle), Albany, and Broome. Animal quarantine stations in each of the States have also been transferred, and steps are being taken for the taking over by the Commonwealth of other stations. New buildings and improvements are in course of construction at several of the transferred stations.

1. From information furnished by the Federal Director of Quarantine.

(ii.) *Administration of Act.* Co-operation between the Commonwealth and State authorities is secured as far as practicable in the administration of the Act, arrangements having been made by which, under the Director of Quarantine, the State Health Departments of Western Australia and Tasmania administer in those States the division of the Act relating to vessels, persons and goods (general quarantine), the Chief Medical Officer of the Department in each case acting as chief quarantine officer. Payment is made for these services to the State Government. In New South Wales, Queensland, and South Australia, this division of the Quarantine Act is administered by a Commonwealth medical chief quarantine officer, while in Victoria, where the Central Administrative Office is situated, this division is directly administered by the Director of Quarantine. The administration of the Acts and regulations relating to oversea animal and plant inspection and quarantine is also carried out by the officers of the State Agricultural Department acting as quarantine officers. Power to take action for the prevention of the spread of disease within a State, still remains in the hands of the State, and as the functions of the Commonwealth and State may be exercised at the same time, the advantage of co-operation is apparent.

(iii.) *Chief Provisions of Act.* The Act provides for the inspection of all vessels from oversea, for the quarantine, isolation, or continued surveillance of infected or suspected vessels, persons, and goods, and for the quarantining and, if considered necessary, the destruction of imported goods, animals, and plants. The obligations of masters, owners, and medical officers of vessels are defined, and penalties for breaches of the law are prescribed. Power is given to the Governor-General to take action in regard to various matters by proclamation, and to make regulations to give effect to the provisions of the Act. Quarantinable diseases are defined as small-pox, plague, cholera, yellow fever, typhus fever, or leprosy, or any other disease declared by the Governor-General, by proclamation, to be quarantinable. "Disease" in relation to animals means certain specified diseases, or "any disease declared by the Governor-General by proclamation to be a disease affecting animals." "Disease" in relation to plants means "any disease or pest declared by the Governor-General by proclamation to be a disease affecting plants." The term "plants" is defined as meaning "trees or plants, and includes cuttings and slips of trees and plants and all live parts of trees or plants and fruit."

(iv.) *Proclamations.* The proclamations so far issued specify the diseases to be regarded as diseases affecting animals and plants; appoint first ports of landing for imported animals and plants and first ports of entry for oversea vessels; declare certain places beyond Australia to be places infected, or as places to be regarded as infected with plague; prohibit the importation (a) of certain noxious insects, pests, diseases, germs, or agents, (b) of certain goods likely to act as fomites, and (c) of certain animals and plants from any or from certain parts of the world; and fix the quarantine lines in certain ports of Australia.

(v.) *Regulations.* Regulations have been made prescribing the quarantine signal; the hours of clearance of vessels; forms of notices, orders, reports, and bonds to be used by masters, medical officers, quarantine officers, and importers; the period of detention of vaccinated and unvaccinated persons in quarantine; the conditions of removal of goods and mails; the method of disinfection of persons, animals, and infected or suspected articles; the conditions under which certain animals not prohibited may be imported; the sustenance charges for quarantine animals; the conditions of importation of hides, skins, wool, hair, bones, and animal manure; the method of carrying out the quarantining, disinfection, fumigation, and treatment of plants and packages. Regulations have also been made with the object of preventing the ingress to and the egress from vessels of rats and mice, and for the destruction of rats, mice, and other vermin.

(vi.) *General.* The procedure has already been greatly simplified. Instead of all oversea vessels being examined in every State, as was formerly the case, those arriving from the south and west are now examined only at the first port of call and pratique

is given for the whole of the Commonwealth, except in cases of suspicious circumstances, while vessels arriving from the northern routes are examined only at the first and last ports. It is expected that the restrictions placed upon oversea vessels will be further removed as the machinery of quarantine is improved. The present freedom from certain diseases which are endemic in other parts of the world, would, however, appear to justify the Commonwealth in adopting precautionary measures not perhaps warranted in the already infected countries of the old world.

3. **Notifiable Diseases.**—Provision exists in the Health Acts of all the States for precautions against the spread and for the compulsory notification of infectious diseases. When any such disease occurs, the Health Department and the local authorities must at once be notified. In some States notification need only be made to the latter body. The duty of giving this notification is generally imposed, first, on the head of the house to which the patient belongs, failing whom on the nearest relative present, and on his default on the person in charge of or in attendance on the patient, and on his default on the occupier of the building. Any medical practitioner visiting the patient is also bound to give notice.

(i.) *Notifiable Diseases Prescribed in each State.* In the following statement those diseases which are notifiable in each State are indicated by a cross:—

DISEASES NOTIFIABLE UNDER THE HEALTH ACTS IN EACH STATE.

Particulars.	N.S.W.	Vic.†	Q'land.	S.A.	W.A.†	Tas.
Anthrax	+	...	+
Ankylostomiasis	+
Beri-beri	+	...
Bubonic plague ...	+	+	+	+	+	+
Cerebro-spinal meningitis	+	+	+	+	...
Cholera	+	+	+	+	+
Continued fever	+	...	+	...
Diphtheria ...	+	*	+	+	+	+
Dysentery	†
Enteric fever	*	+	+	+	+
Erysipelas	+	+	+	...
Gonorrhœa	†**
Infantile Paralysis	+	+	+
Leprosy ...	+	+	††	+	+	+
Malarial fever	+	...
Measles	+
Membranous croup	+	+	+	...
Ophthalmia neonatorum	+	+
Poliomyelitis anterior acuta ...	+	+	+
Puerperal fever	+	+	+	+	+
Pulmonary tuberculosis(phthisis)	*	+	+	+	+
Relapsing fever	+	+	+	...
Scarlet fever ...	+	*	+	+	+	+
Scarlatina	*	+	+	+	+
Septicæmia	+	+	...
Small-pox ...	+	+	+	+	+	+
Syphilis	†**
Trichinosis	+
Typhoid ...	+	*	+	†	+	+
Typhus Fever	+	+	...	+	+
Whooping cough	+	...	+
Yellow fever...	+	+	+	+	+

‡ Those diseases marked with an asterisk in this column have been declared notifiable diseases, while those marked by a cross have been declared "dangerous infectious diseases" under the Public Health Act 1890, and when prevalent in any municipal district may be declared notifiable diseases within such district. † Other diseases enumerated as notifiable under "The Health Act 1911" of this State are pyæmia, and Malta, dengue, low and Colonial fevers. † Thursday Island area only. ** Metropolitan area of Brisbane only. †† Under the Leprosy Act 1892.

(ii.) *Duties of Authorities.* As a rule the local authorities are required to report from time to time to the Central Board of Health in each State as to the health, cleanliness, and general sanitary state of their several districts, and must report the appearance of certain diseases. Regulations are prescribed for the disinfection and cleansing of premises, and for the disinfection and destruction of bedding, clothing, or other articles which have been exposed to infection. Bacteriological examinations for the detection of plague, diphtheria, tuberculosis, typhoid, and other infectious diseases within the meaning of the Health Acts are continually being carried out. Regulations are provided in most of the States for the treatment and custody of persons suffering from certain dangerous infectious diseases, such as small-pox and leprosy.

(iii.) *New South Wales.* The proclamation and notification of infectious diseases are dealt with in Part III. of the Public Health Act 1902. Special provision is made by that Act for the notification of small-pox and leprosy, and for the custody and treatment of lepers. Many improvements have been effected by the Sydney Harbour Trust (see Section XXVI. hereof, page 977) with a view to generally improving the hygienic condition of the area under its control, and especially with the object of preventing the introduction of bubonic plague. Special reports dealing with the aetiology of outbreaks of plague have been published.

(iv.) *Victoria.* Under Part VIII. of the Public Health Act 1890, the notification of small-pox, cholera, plague, yellow fever, and other prescribed malignant, infectious, or contagious diseases is compulsory. An amending Act, passed in 1907, requires medical practitioners and registrars to report all cases of notifiable diseases coming under their notice in any proclaimed district, and not merely those cases which occur in the district in which the practitioner or registrar is resident.

(v.) *Queensland.* Under Part VII. of the Health Act 1900, all cases of infectious diseases must be notified; special provision is made for notification of cases of phthisis and small-pox. A report on plague in Queensland for a period covering eight successive years—1900 to 1907—has been published by the Commissioner of Public Health. Apart from the statistical data collected and collated, the report deals exhaustively with the medical, preventive, administrative, and epidemiological aspects of the plague, as observed in Queensland. Plague hospitals are provided at Maryborough, Bundaberg, Gladstone, Mackay, Townsville, and Cairns. Provision is also made for the diagnosis of leprosy, and lepers are sent to Peel Island, Moreton Bay.

(vi.) *South Australia.* In this State cases of infectious diseases must be reported to the local Board, under the provisions of Part VIII. of the Health Act 1898. The onus of notification is placed primarily on the head of the family, and, failing him, the nearest relative, the person in charge, or the occupier of the house; in any case, notification must be given by the medical practitioner attending.

(vii.) *Western Australia.* Regulations made under the Health Act 1898 provide for the compulsory notification to local Boards of infectious diseases. The local Boards must report to the Central Board. The necessity for providing hospital treatment for infectious cases has been recognised by the Boards of Health, and in several instances wards for the treatment of these cases have been erected.

(viii.) *Tasmania.* Provisions regarding the prevention and notification of infectious diseases are contained in the Public Health Act 1903, as amended in 1908.

4. Vaccination.—In the State of New South Wales there is no statutory provision for compulsory vaccination, though such exists in all the other States of the Commonwealth. With the exception of Victoria, the Vaccination Acts are, however, not generally enforced. The following table shews, so far as particulars are available, the number of persons vaccinated in each State from 1908 to 1912 inclusive:—

NUMBER OF PERSONS VACCINATED IN EACH STATE, 1908 to 1912.

Year.	N.S.W.*	Victoria.	Q'land.†	S. Aust.	W. Aust.	Tasmania.
1908	42	20,924	...	1,502	616†	†
1909	11	21,344	...	1,477	†	†
1910	280	21,575	...	...	†	†
1911	20	20,562	...	+	†	†
1912	...	21,548	...	†	†	†

* By Government medical officers only. † Returns not available. ‡ Notifications of vaccinations to district registrars during year 1908-9.

In 1903, 24,857 persons were vaccinated in Tasmania, this being accounted for by the small-pox epidemic which occurred in Launceston in that year.

(i.) *New South Wales.* Although there is no provision for compulsory vaccination in this State, public vaccinators have been appointed. A fee is paid, and free lymph is provided.

(ii.) *Victoria.* Compulsory vaccination is enforced throughout the State, under Part IX. of the Health Act 1890. From the year 1873 up to the present time it is estimated that 72 per cent. of the children whose births were registered have been vaccinated. Free lymph is provided.

(iii.) *Queensland.* Although compulsory vaccination is provided for in this State, under Part VII. of the Health Act 1900, only one remote district has been proclaimed under the Act. In the early part of 1912, the Queensland Government sent a medical expedition to the islands in Torres Straits. Over 1200 natives were vaccinated with a view to reducing the risk of the introduction of small-pox from New Guinea.

(iv.) *South Australia.* The Vaccination Act 1882, which applies to South Australia and the Northern Territory, is enforced by the vaccination officer of the State and by the Police Department. Under this Act vaccination was compulsory, but in 1901 an Act to abolish compulsory vaccination was passed. This latter Act was subsequently amended, and the present law is that no parent is liable to any penalty if, within 12 months from the birth of the child, he makes a declaration that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers the declaration to the vaccination officer. It is estimated that about 15 per cent. of the children born are vaccinated.

(v.) *Western Australia.* In this State vaccination is compulsory under the Vaccination Act 1878, which, however, remains almost a dead letter. All district medical officers are public vaccinators, but they receive no fee for vaccinations.

(vi.) *Tasmania.* All infants in Tasmania are nominally required, under the Vaccination Act 1898, to be vaccinated before the age of 12 months, unless either (a) a statutory declaration of conscientious objection is made, or (b) a medical certificate of unfitness is received. The Act is not enforced, and practically no vaccination of infants is performed in the State, or has been performed since the small-pox outbreak in Launceston in 1903, when 66 cases occurred with 19 deaths. It is estimated that 45,000 persons, or about one quarter of the present population, have been vaccinated.

§ 6. Filariasis and the Destruction of Mosquitoes.

1. *Introduction.*—The remarkable development of parasitology in recent years and the increase in knowledge of the part played by parasites in human and animal diseases have shewn that the difficulties in the way of tropical colonisation, in so far as these arise from the prevalence of diseases characteristic of tropical countries, are largely removable by preventive and remedial measures. Malaria and other tropical diseases are

coming more and more under control, and the improvements in hygiene, which science has accomplished, lend an entirely new aspect to the question of white settlement in countries formerly regarded as unsuitable for colonisation by European races. In Australia the most important aspect of this matter is at present in relation to such diseases as filariasis, malaria, and dengue fever, which, although practically unknown in the southern States, are of common occurrence in many of the tropical and sub-tropical parts of the Commonwealth. In Brisbane, for example, it is stated that during 1908 an examination was made of 200 patients who had been admitted consecutively to the general hospital, and it was found that 17 per cent. were suffering from filaria, though only a few of them had been brought in for treatment for that disease. It is also stated that an examination made in 1909 of 1000 patients admitted for all causes at the general hospital at Brisbane shewed that 13 per cent. of them were infected with filaria. It may here be mentioned that an Institute of Tropical Medicine was inaugurated in January, 1910, at Townsville, under the control of an expert officer. In his report for 1910, the Director of the Institute refers especially to the initial difficulties confronting him on account of (1) the scarcity of suitable laboratory animals for experimental purposes, and (2) the absence of any systematic scheme of collaboration with medical confrères throughout the tropical portions of Queensland, which is stated to be essential to the success of the Institute, both difficulties requiring some little time and money to overcome. Most of the scientific work done during 1910 is necessarily in an incomplete state, but a fairly large amount of material, especially with regard to animal parasites, has been collected and will be dealt with at an early date. A full course of instruction in tropical medicine and parasitology will be arranged for, in future, at Townsville.

2. Scope of Operations.—In certain parts of Australia considerable benefit has already resulted from the adoption of methods of anti-malarial prophylaxis. The extermination of mosquitoes in their larval stage by drainage, screening and oiling of water supplies, and the isolation of infected persons, are some of the methods pursued with success. It would appear, however, that before any general comfort and freedom from house mosquitoes and from the diseases carried by these insects can result, a much wider crusade for the destruction of the mosquito, involving absolute co-operation and conscientiousness on the part of the community in the elimination of breeding places of mosquitoes, is necessary.* In many countries "Mosquito Brigades" have been organised, whose object is the killing of the mosquito and the removal, as far as possible, of the conditions favourable to the insect. In other countries the churches, medical societies, corporations, business organisations, factories, and schools have all taken part in organising lectures and spreading literature dealing with the mosquito.

3. Queensland.—The existence of filariasis was first discovered some thirty-three years ago. The *Stegomyia fasciata*, conveyer of yellow fever, is a common domestic mosquito throughout Eastern Queensland during the summer, but so far has never been infected from abroad. Occasional limited outbreaks of malaria occur in the northern parts of the State; one at Kidston, in 1910, resulted in 24 deaths. The infection was traced to newcomers from New Guinea. Prior to 1912 several efforts were made to deal with the mosquito question in the larger centres, but, owing to the absence of the statutory powers, these had only limited success. Special provisions of the Health Act Amendment Act of 1911 remedied this defect, and extensive operations, involving oiling, drainage, tank screening, the use of larvivorous fish, and other measures have been organised by the Department of Public Health. The metropolitan local authorities contributed £420 towards the undertaking for the first year. Some 50,000 square yards of natural breeding places are attended to weekly by a special mosquito squad, over 2000 street gullies are oiled, and tank screening with fine wire gauze is being steadily enforced on owners and occupiers. The work is continued through the winter, in order to reach the eggs and larvae at their period of lowest vitality. The Department's inspectors have also received a course of training in insect destruction, with a view to enabling the introduction of yellow fever or other insect-borne epidemic disease to be promptly and effectively met.

* See Report of the Commissioner of Public Health, Queensland, 1908-9, Appendix C., p. 17.

4. **South Australia.**—During the year 1907 malaria assumed such a serious form at the Government Smelting Works at Daly River, in the Northern Territory, that almost every employee was invalided to Palmerston for treatment. Early in 1908 preventive measures in the way of improved camp hygiene, treatment of swamps by petroleum, and the systematic use of quinine, were adopted, with the result that during that year no case of malaria appeared among the Government employees, although the natives and outsiders suffered as badly as before. The whole experiment cost under £5. Similar precautions have been adopted in other parts of the State.

5. **Other States.**—In Western Australia it is stated that malaria is not known to exist south of the 20th parallel, while filaria has not been discovered at all. No mosquito-borne diseases are known to exist in Victoria or Tasmania, and it is stated that filariasis is uncommon in New South Wales, the only cases known being imported ones. Kerosene and petroleum have been successfully used to destroy mosquitoes at various places in these States both by municipalities and private individuals.

7. Supervision of Infant Life.

1. **Introduction.**—It has been frequently stated in recent years that when the social, climatic, and industrial conditions are taken into consideration, the infantile mortality of Australia, particularly in the large towns, is much higher than it should be. It is now generally recognised, however, that infant mortality is largely attributable to parental ignorance and neglect, and that, in particular, improper feeding is accountable for perhaps the majority of infant deaths. In all the States of the Commonwealth, Acts have been passed with the object of generally supervising the conditions of infant life and of reducing the rate of infantile mortality, and in many of the large towns measures have been adopted by private individuals to spread among the mothers a knowledge of the best methods of feeding and caring for their infants. Milk Institutes have also been established after the manner of the *Gouttes de Lait*¹ in Europe, with the object of reducing the number of deaths of infants from milk poisoning in the summer months. Reference has been made in a previous part of this book (see page 211) to the number of infantile deaths and the rates of infantile mortality in each State, and it will be convenient to here shew corresponding particulars for the year 1912, classified according to metropolitan and other districts in each State:—

INFANTILE DEATHS AND RATES OF INFANTILE MORTALITY FOR METROPOLITAN AND OTHER DISTRICTS, 1912.

Districts.	N.S.W.	Victoria.	Queensland.	S.A.	W.A.	Tasmania.	C'wealth.
NUMBER OF INFANTILE DEATHS.							
Metropolitan	1,555	1,523	395	310	363	110	4,256
Other ...	2,127	943	949	435	350	281	5,092*
RATES OF INFANTILE MORTALITY.†							
Metropolitan	76.55	90.18	81.73	52.65	96.13	82.64	81.69
Other ...	67.42	49.88	68.25	70.26	71.24	62.14	62.88

* Including 7 in Commonwealth territories.

† i.e., the number of deaths of infants under one year of age per thousand births.

1. Organised action in this direction commenced in 1894 in Belgium. The original Belgian Society is known as the "*Société des Gouttes de Lait*." The movement has become an international one, and branches of the Society have been founded all over Europe. Similar philanthropic work was commenced in the United States of America before 1894.

It may be seen that in each State the rates of mortality are higher in the metropolitan than in other districts. The causes of "preventable" deaths may generally be attributed to milk poisoning, want of knowledge on the part of mothers, inability to nurse, and lack of the necessary medical facilities.

The figures in the above table do not, however, completely represent the hygienic aspect of the question. For every infant death recorded there are probably three or four survivors who have sustained more or less serious permanent physical damage, quite apart from injuries at birth or congenital causes. It is stated that the far-reaching influence of the first year or two of life upon the whole subsequent physical welfare of the individual cannot be recognised too clearly, and it has been alleged that many serious defects and diseases occurring in later life may be credited to results ensuing from infantile disease. This is particularly the case in respect of digestive diseases.¹

The conditions regulating the employment of boys and girls in shops and factories are referred to in the section of this book dealing with *Industrial Unionism and Industrial Legislation* (Section XXVII.). Certain particulars have also been given in Section XXIV. (pages 929 to 931) of this book regarding Orphanages, and Industrial and Reformatory Schools in Australia. Though perhaps not directly connected with the subject of Public Hygiene, it will be convenient to refer briefly in this sub-section to the principal Acts which have been passed in each State dealing with the subject of child-life, and to the principal functions of the States' Children's Departments.

2. New South Wales.—In this State there is a State Children's Relief Board under the direct control of an Honorary Board of nine members and under the administration of the Minister of Public Instruction.

(i.) *Scope of Operations.* The scope of the Department's operations comprises matters under the following Acts:—

(a) *The Infants' Protection Act 1904.* This Act deals with the control of children up to the age of seven years in licensed homes, and with the supervision of such homes. These latter fall into two classes—(1) The private homes of individual women householders, licensed for two or three children, and (2) institutions maintained by public subscription, licensed for any number of children up to 100. The Act also deals with paternity proceedings in connection with the enforcement of maintenance for illegitimate children.

(b) *The State Children's Relief Act 1901.* This Act deals with the boarding-out of destitute children, and includes the extension of monetary aid for children under twelve years of age who are allowed to remain with their own mothers when the latter are widows or deserted wives in destitute circumstances.

(c) *The Children's Protection Act 1902* deals with the supervision of lying-in homes, in so far as the children born therein are concerned. It also provides for the registration of children up to three years old boarded out privately apart from their mothers.

(d) *The Neglected Children's and Juvenile Offenders Act 1905* has provided for the establishment of Children's Courts throughout the State. The Act deals with the disposal of neglected and uncontrollable children and juvenile delinquents who come before the Courts. It contains provisions for the supervision of truant children, and for the introduction of machinery necessary to carry out the purposes of the Act.

(e) *The Public Instruction Act 1880.* The supervision of all children of school age is carried out by officers of the State Children's Relief Department, and action in regard to truancy and prosecutions for breaches of the compulsory clauses of the Public Instruction Act are undertaken.

(ii.) *General Supervision of Conditions of Infant Life.* The principal functions of the State Children's Relief Department are as follows:—(a) Provision for sickly infants with, or without, their mothers at the homes at Paddington and Thirlmere. About

1. See Report of Department of Public Health of Tasmania for 1906-7.

twenty children are treated in each home. (b) The compulsory attendance of guardians of infants, boarded out independently by their mothers under the Children's Protection Act, at the Metropolitan Hospital fortnightly, in order that the children in their charge may be systematically supervised by the doctors, and the development of ailments checked. (c) A home for healthy babies, twenty in number, at Croydon, with their mothers, the object being to free the latter from the more or less contaminating influences of large institutions, and at the same time to protect the children from dangers of infection. (d) The establishment of separate cottage homes for invalid children, according to their ailments, including special cottages for the scientific treatment of epileptic and feeble-minded children. (e) The supervision of all children dealt with at the Children's Courts, the Carpenterian Reformatory, and the Industrial School for Girls. A special aspect of the Board's work under this heading is the supervision of children released on probation, and of children committed to the Farm Home, Mittagong.

3. **Victoria.**—The conditions of infant life in Victoria are, to some extent, supervised by the Department for Neglected Children and Reformatory Schools under the Neglected Children's Act 1890, the Crimes Act 1890, and the Infant Life Protection Act 1907. In Melbourne the Lady Talbot Milk Institute was established in 1908 in order to provide a supply of pure milk for infants. In the first annual report of the Institute, it is stated that out of about 300 infants supplied with milk by the Institute during 1908-9, only eight died. Crèches have been established in many of the suburbs of Melbourne.

(i.) *The Neglected Children's Act 1890.* This Act provided for the establishment of receiving houses and probationary schools, and for the committal of neglected children to the care of the department already referred to, or to approved private persons or institutions. Assistance is afforded to the department by ladies' committees in finding suitable homes for boarded-out children, and in supervising these homes. A receiving dépôt has been established, and special schools are provided for boys who are backward in their education. A certain number of boys, who bear the best of characters, are sent to learn farming at the Rutherglen Viticultural College.

(ii.) *The Crimes Act 1890* provided, *inter alia*, for the establishment of reformatory schools for convicted children. A considerable number of court committals and transfers from gaol are made to these reformatory schools.

(iii.) *The Infant Life Protection Act 1907.* This Act came into force on the 31st December, 1907, and all infants then in registered homes were transferred to the care of the department. Provision is made for the inspection of registered homes, which are divided into districts, allotted to four inspectors. The Act does not provide for the registration or supervision of maternity homes.

(iv.) *The Children's Court Act 1906.* This Act provides for the establishment of Children's Courts in every place in the State where a Court of Petty Sessions is appointed to be held. Any boy or girl under the age of seventeen years may be released by the Court on probation under the supervision of a Probation Officer, who may at any time bring before the Court any child under his supervision who has broken any of the terms of his probation. The Courts have power to commit children to the Neglected Children's Department or to reformatory schools.

4. **Queensland.**—The Infant Life Protection Act 1905 is administered by the Commissioner of Police. This Act provides, that, with certain exceptions, no person may receive, in consideration of any payment, into his house any infant under the age of three years for the purpose of nursing such infant apart from its parents for a longer period than forty-eight hours, or of adopting such infant, unless the person is registered as the occupier of the house and the house is registered as a nursing home. Registration of adopted infants is compulsory, and notice of the birth or death of illegitimate infants

must be given within three days. Police investigation occurs in the case of every illegitimate child born, whether the child be finally sent to a nursing home, adopted, or taken charge of by parents or relatives.

The Lady Chelmsford Pure Milk Institute was opened in 1909 for the supply of a clean pure milk in Brisbane for infant feeding. The delivery of the milk began on the 1st July, 1909.

5. South Australia.—The State Children's Act 1895 provides for the constitution of a council to have the control of all State children and the supervision of all institutions for their reception, education, or training. The Act provides for the establishment and inspection of institutions, for the commitment, release, and apprenticing or placing out of children, and for the licensing and supervision of lying-in homes and foster-mothers. Illegitimate children are also received into the institutions under the care of the council and are placed out in various homes. It is stated that the result, so far as illegitimate children are concerned, is that the death-rate of infants supervised by the council is under 7 per cent., while the death-rate of those not under such supervision is 45 per cent.

6. Western Australia.—In Western Australia the State Children's Act 1907, provides for the control of boarded-out infants, the registration of foster parents, and the general supervision of the conditions of infant life and of neglected or destitute boys and girls under the age of eighteen years. The Act is administered by the State Children's Department. The registration of maternity homes is obligatory, and persons acting as paid foster-mothers to any child under the age of three years must be licensed. Neglected or destitute children may be committed to orphanages, and convicted children to industrial schools. There is one Government institution under the Act, and it is used as a receiving dépôt for the temporary detention of all classes of children. The Act also provides for the establishment of Children's Courts, which must not be held in any police or other court-house.

With regard to the prevention of infantile mortality, the educational aspect has been met by the free distribution of pamphlets giving directions to mothers respecting the care and feeding of infants.

7. Tasmania.—The Infant Life Protection Act 1907, which is administered by the Commissioner of Police, provides for the protection of illegitimate and privately boarded-out infants, and for the compulsory registration of nursing homes and occupiers. Notice of the death of an infant in a registered home must be given within twenty-four hours, and the adoption of illegitimate infants under five years of age must be registered. Notice of the birth or death under the age of five years of an illegitimate infant is also compulsory. The Act also deals with paternity proceedings, in connection with the payment of preliminary or maintenance expenses for illegitimate children.

§ 8. Medical Inspection of State School Children.

1. Introduction.—For many years medical officers of health and many others concerned in education generally have, from time to time, suggested the desirability of a medical inspection of school children. The State, which enforces school attendance under penalties, is also under the obligation of securing a satisfactory hygiene for the child during such attendance. Moreover, efficiency in education demands several things, viz., that the conditions under which the studies are made shall be physically and hygienically satisfactory; that there shall be no undue concentration of nervous effort on school work, and that the child shall be reasonably safeguarded against infection, etc. Only by an adequate scheme of medical supervision can these results be attained.

Several limited and isolated surveys of the physical proportions of Australian children have been made during the past 30 years in the various States. The first important systematic survey, however, was made in Sydney in 1901, and the results were

reported by the Government Statistician of New South Wales to the Australasian Association for the Advancement of Science Conference in Hobart in 1902, and shewed that the Sydney boy was taller than the English boy, but that his chest expansion was small in comparison with European figures.

A series of measurements on 500 boys took place concurrently but independently in Hobart during 1901, which also gave similar results. It was recognised that the figures were based on limited numbers, but they at least challenged attention. The 1901 survey in Sydney, though small, was a valuable and suggestive contribution to anthropometric research in Australia, and may be regarded as the beginning of a systematic attempt to ascertain what characteristics of bodily form are exhibited in Australia. This inquiry roused considerable interest in the other States, and series of measurements have since been made in Western Australia, Tasmania, and South Australia, by various authorities, and in Victoria by the Education Department's medical officers. Each year since 1907 the Department of Education of New South Wales has carried out regular anthropometric measurements of the height and weight of school children, and now possesses records of about 90,000 children, the results being detailed in the Department's Annual Reports. A card for each child allows his measurements for successive years to be recorded. The department perambulated the apparatus, each set serving about 20 schools, and the visits recur in the same month of each succeeding year.

2. Co-ordination of Effort.—So far as it has been carried out, the medical inspection of school children goes to shew that in Australia, as in other lands, the hygiene, both of the schools and of the pupils therein, is more defective than is ordinarily recognised, and that not only preventable physical injury to the rising generation from school conditions can be avoided, but also instruction itself can be made more efficient by a proper regard to the demands of a good school hygiene. With a view to securing uniformity of procedure in the several States the Commonwealth Government in 1907 formulated a scheme and communicated with the States asking their co-operation in obtaining measurements of school children with a view to establishing the relations between age, weight and height, chest measurement, etc. Delays occurred from various causes, but in a paper read at the Science Congress in Sydney 1911, the subject was again brought under notice, and this led to the appointment by the congress of a committee of experts to encourage anthropometric research and to consider the organisation of a systematic survey of school children throughout Australia. The scheme was essentially identical with the former proposals of the Federal Government, but in the interim the report of the British Anthropometric Committee became available, thus making possible a method uniform with that of Great Britain, and making the results immediately comparable with those of Europe.

The Australian Anthropometric Committee has drawn up a memorandum setting forth the importance and object of the survey, and suggestions as to method for the use of teachers, physical trainers and others interested.

The proposed survey is as follows:—The children's heights, weights and chest-measurements are to be taken once a year as near as possible at the same time of the year. A card for each child enables his development to be watched. Differently coloured cards are used for boys and girls. These cards should be kept in the schools, and the results tabulated on sheets and sent to the Commonwealth Statistician for the general tabulation, the Federal Government being willing for this to be undertaken.

In several States advantage has been taken by the Anthropometric Committee of the assembling of teachers in physical training camps to arrange for a demonstration on the object and method of the survey. Much interest has been roused, particularly as affecting the physical growth of school children, and as regards fatigue-effects in connection with the school programme or drill requirements. If in the Anatomical Schools of the Universities special teaching in anthropometric methods were given, it would perhaps facilitate the work. This has been done in some of the universities of the United Kingdom.

As regards the anthropometrical aspect of the matter, questions dealing with physique and growth must receive more intelligent attention than has hitherto been the case here,

if the future of the British race in Australia is to be properly studied. A uniform scheme of comparative physical observations of children would go to shew the ultimate influence of the Australian climate on the British race, and would serve as a guide to the importance of certain forms of physical training. In addition, the importance of gathering information concerning the general trend of physical and mental development of Australian children, the variations induced by environment in different localities and different latitudes, and the extent of preventable influences capable of injuriously affecting mental and physical development, is sufficiently apparent.

On the coming into operation of the Defence Act of 1910, military training became compulsory in the Commonwealth, and advantage has been taken of the prescribed medical examination to make a systematic record of the height, weight and chest measurement of each trainee. There can be no doubt that these anthropometric records will in time furnish valuable data for the study of Australian physical development. Further reference is made to this subject in the section dealing with "Defence."

3. New South Wales.—In this State, arrangements were made in May, 1907, for the medical inspection of school children in Sydney, and later in the year the work was extended to Newcastle. At the inauguration of the scheme, it was considered advisable to restrict the work of the first year to two populous centres in order to determine what procedure would be necessary, and what limits could best be assigned in the further development of the work. Two inspectors were appointed for the first year's work, and a third in March, 1909. The scheme as now in operation embraces Sydney and suburbs, Newcastle and the West Maitland districts, and its extension to other country centres is gradually being carried into effect.

The results of the fourth year's work shew that during that period 144 schools, having an enrolment of 67,577 pupils, were visited by the inspectors. Of the total number of pupils, 16,909, or 25 per cent., were presented by the teachers for medical inspection as suffering from some physical defects. Of that number, 4848, or 28 per cent., were found to be suffering from defects of vision; 5750, or 34 per cent., were returned as suffering from post-nasal trouble; 2025, or 13 per cent., from throat trouble; 651, or 3 per cent. from very defective teeth, 487, or 2 per cent., from swollen glands; and 1509, or 8 per cent., from either defective hearing or ear trouble. The percentages here stated refer only to children presented as defective cases to the school doctors. Of the total enrolment at the schools, 7.2 per cent. had bad sight, 8.5 per cent. nasal trouble, 3.7 per cent. throat trouble or swollen glands, and 2.2 per cent. defective hearing or ear trouble.

NEW SOUTH WALES.—HEIGHT AND WEIGHT OF SCHOOL CHILDREN, 1911.

Age last Birthday.	Boys—26,597 Records.		Girls—23,100 Records.	
	Average Height.	Average Weight.	Average Height.	Average Weight.
	Inches.	Lbs.	Inches.	Lbs.
3 years ...	40.9	39.0	40.0	37.9
4 " ...	41.4	39.2	40.5	38.5
5 " ...	42.3	42.9	42.0	40.8
6 " ...	44.2	44.9	44.1	44.4
7 " ...	46.5	49.8	46.1	48.4
8 " ...	48.2	53.7	48.1	52.8
9 " ...	50.3	58.6	49.9	57.5
10 " ...	52.2	64.0	51.9	62.8
11 " ...	53.8	68.1	53.9	69.7
12 " ...	55.5	74.9	56.0	77.1
13 " ...	57.4	83.2	58.2	86.5
14 " ...	60.2	94.4	60.5	96.8
15 " ...	63.0	108.2	61.4	105.3
16 " ...	65.3	122.5	62.0	111.4
17 " ...	66.7	132.1	62.6	114.8
18 " ...	66.8	137.1	63.3	121.1

Since its initiation in 1907, the scheme has embraced 140 schools, having an enrolment of 85,000 pupils, while upwards of 50,000 physical records have been received from teachers. The foregoing table shews the results of height and weight measurements recorded during the year 1911.

4. **Victoria.**—In Victoria three medical inspectors have been appointed by the Education Department, and a commencement was made towards the end of 1909 by the examination of the pupils attending the Melbourne Continuation School. An Advisory Committee was also appointed to formulate a scheme of medical inspection, which it is proposed to extend to all State schools in Victoria. During the year 1909-10 the chief work of the inspectors consisted in carrying out a preliminary investigation of the health of the pupils in various schools in town and country, and it was stated in the Report of the Minister of Public Instruction for that year that the result of this investigation had shewn the presence of an amount of physical defect which, were it not paralleled in other lands would, in its magnitude, seem incredible. During the year ending 30th June, 1911, many of the ideas and intentions outlined in the previous Annual Education Report were initiated, and the foundation laid for a proper and systematic scheme of medical school instruction in future. In the year 1911-12 8065 children attending elementary schools were examined and the results are appended below. The following table shews the defects and their percentage amongst Victorian boys and girls in all elementary schools examined:—

VICTORIA.—NUMBER AND PERCENTAGE OF DEFECTS IN SCHOOL CHILDREN, 1911-12.

Number of Children Exam'd.	PARTICULARS OF DEFECTS.												
	Vision.	Hearing.	Nose and Throat.	Dental.	Hair.	Deformities.				Heart.	Anemia.	Skin.	Hernia.
						Chest.	Shoulders.	Lateral Curvature	Lungs.				
NUMBER SUFFERING FROM DEFECTS.													
Boys 4153	762	1,026	1,233	2,356	96	35	156	52	14	45	60	26	54
Girls 3912	362	579	696	1,780	1,259	28	593	49	6	91	49	6	2
Total 8065	1,124	1,605	1,929	4,136	1,355	63	749	101	20	136	109	32	56
PERCENTAGE ON TOTAL NUMBER EXAMINED, SUFFERING FROM DEFECTS.													
Boys 4153	18.3	24.7	29.5	56.6	2.3	0.8	3.7	1.2	0.3	1.0	1.4	0.6	1.3
Girls 3912	9.2	14.8	17.7	45.5	32.1	0.7	15.1	1.2	0.1	2.3	1.2	0.1	0.1
Total 8065	13.9	19.9	23.8	51.2	16.8	0.7	9.2	1.2	0.2	1.6	1.3	0.3	0.6

5. **Queensland.**—In this State a systematic scheme for the inspection of State school children has recently been prepared and came into operation on 1st January, 1911, under which a Medical Branch of the Department of Public Instruction was created, consisting of a Medical Inspector of Schools, a School Nurse, and a Dental Inspector. Reports on the work of this branch for the half-years ending 30th June and 31st December, 1911, have been presented.

The examinations made during the first six months of the year were confined to the schools in the metropolitan area, those made in the latter half of the year being held at schools in West Queensland. Of the 3068 children examined in Brisbane, 973, or 31.71

per cent. were found to be physically defective to an extent which either seriously interfered, or threatened to do so shortly, with their educational progress; while for the 1199 children examined in West Queensland, corresponding figures were 547, or 45.62 per cent. It will be seen that the percentage of country children with notifiable defects is much larger than the percentage of children with notifiable defects found in Brisbane. The difference is accounted for by the condition of the eyes in the children of Western Queensland; 17.34 per cent. of the children received notices on account of the condition of the conjunctiva, this factor being entirely absent from the Brisbane statistics. For physique and nutrition the country scholars compared very favourably with those examined in the metropolis. During the year the dental inspector examined the teeth of 5706 school children. His report shews an appalling percentage of defects. In the metropolitan schools only 4 per cent. of the children had mouths free from caries; while in the country schools the percentage, although certainly higher, was only 10 per cent. It is expected that periodical inspection, together with the advice and lessons given in dental hygiene, will bring about a marked improvement, not only in the condition of the children's teeth, but also in their general health. The Standard of Vision taken as interfering with the child's progress is $\frac{6}{12}$ and $\frac{8}{8}$, the latter only if the child complains or suffers from headaches, or assumes unnatural attitudes in trying to see. The standard adopted for defective hearing is $\frac{1}{8}$. For explanation and significance of these fractions see footnote attached to the second table of this subsection.

In the reports the relation between educational progress or intelligence and physique and nutrition is shown under the three degrees of comparison, indicated by the words "Good," "Fair," and "Poor." In the following tables the figures given in the two half-yearly reports have been added together, and thus the results of the whole year's examinations are shewn:—

QUEENSLAND.—RELATION BETWEEN INTELLIGENCE OF SCHOOL CHILDREN AND PHYSIQUE AND NUTRITION, YEAR ENDING 31st DECEMBER, 1911.

Intelligence.	Number Examined.	Physique.			Nutrition.			
		Good.	Fair.	Poor.	Good.	Fair.	Poor.	
NUMBER OF CHILDREN.								
Good	...	2,057	1,182	625	250	1,385	544	128
Fair	...	1,841	871	643	327	1,096	595	150
Poor	...	369	131	143	95	184	126	59
		4,267	2,184	1,411	672	2,665	1,265	337
PERCENTAGE ON NUMBER EXAMINED IN EACH CLASS.								
Good	...	2,057	57.5	30.4	12.1	67.3	26.5	6.2
Fair	...	1,841	47.3	34.9	17.8	59.5	32.3	8.2
Poor	...	369	35.5	38.8	25.7	49.9	34.1	16.0

The children examined were also classified according to "intelligence" and "physical condition." This classification is shewn in the following table, and it may be observed that the columns marked with a (x) indicate conditions which are alleged to interfere seriously with the child's school progress. In this table "deafness" does not include the deafness accompanying adenoids, nor does "physical defects" include such as are incidental to adenoids. Excluding the first and last columns, the figures in the table represent individual defects, not individual children.

**QUEENSLAND.—RELATION BETWEEN INTELLIGENCE OF SCHOOL CHILDREN
AND PHYSICAL CONDITION.**

Intelligence.	Number Examined.	Adenoids.			Defective Vision.*		Deafness.*	Weak Hearts.	Enlarged Glands.	Anæmia	Physical Defects.	Mental Deficiency.
		x Marked.	Slight.	Re-moved.	x 1/2 or worse.	%						
NUMBER OF DEFECTS.												
Good	2,057	429	633	58	160	200	64	44	384	165	523	0
Fair	1,841	521	573	63	125	200	82	43	410	314	640	0
Poor	369	144	97	24	22	34	28	12	113	85	151	11
	4,267	1,094	1,303	145	307	434	174	99	907	564	1,314	11

PERCENTAGES OF NUMBER OF DEFECTS ON CHILDREN EXAMINED.

Good ...	2,057	20.9	30.8	2.8	7.8	9.7	3.1	2.1	18.7	8.2	25.4	0.0
Fair ...	1,841	28.3	31.1	3.4	6.8	10.9	4.5	2.3	22.3	17.1	34.8	0.0
Poor ...	369	39.0	26.3	6.5	6.0	9.2	7.6	3.3	30.6	23.0	40.9	3.0

* Normal hearing is assumed to be susceptible to an ordinary whisper over a distance of eighteen feet and is represented by the denominator of a fraction, while its numerator indicates to what this distance has to be reduced in order that the whisper may become intelligible. Visual condition or vision is similarly represented by a fraction, the denominator of which represents the distance in metres (a metre being approximately forty inches) at which normal vision would clearly distinguish an object, while the numerator indicates the reduction in distance required ere the patient attains clear effortless visual perception. Thus $\frac{x}{f_2}$ would mean that a person whose eye test was represented by that fraction, could only see an object at six metres distance, which had he possessed normal vision he would have seen at a distance of twelve metres. Normal vision, which is generally tested by Snellen's ordinary test type, is represented by the fraction $\frac{6}{6}$.

6. **South Australia.**—South Australia is now the only State which has no medical supervision of its school children, but provision has now been made on the estimates for a medical officer, a dental officer, and two trained nurses. In 1909, at the desire of the Government, Dr. Rogers examined 1000 school-going children in different parts of the State. No children under seven years nor over 15 years of age were examined. Investigations were made with regard to personal appearance, cleanliness, height, weight, chest measurements, teeth, eyesight, hearing, nose and throat, etc., and the report was presented to the Minister for Education in September, 1910, the results being, on the whole, satisfactory. A summary of this report, which contains statistical details exhibiting many interesting comparisons between various States in the Commonwealth and other parts of the world, was given in the previous issue of this book (see vol. No. 5, pp. 1132 to 1138).

7. **Western Australia.**—No general scheme for school medical inspection exists here, although examination in a few metropolitan schools has been intermittently carried on. During the latter part of 1906 and the first half of 1907 an extended examination of about 3300 children was conducted by the Department of State Medicine and Public Health with the co-operation of the Education Department. These children were attending the State schools in Perth, Fremantle, Kalgoorlie, Boulder, Bunbury, and Albany. Many physical defects among the children were detected, and the co-operation of the Inspector-General of Schools has resulted in steps being taken, where possible, to provide better hygienic conditions. The system followed during 1909 was that, wherever possible, a visit was made to a school, the teacher bringing up all children who appeared to be suffering from any physical defects or bodily ailments. The exact condition of the child having been determined, a notice was sent to the parents calling attention to the

necessity of obtaining treatment for the defect. Under the "Health Act 1911," Medical Officers of Health become medical officers of schools and school children, and during the last quarter of that year, 52 State schools and 11 private schools were medically examined; twenty-three of these were in the Metropolitan district, 17 on the Goldfields, and 26 in other parts of the country. The results of the inspections are being collated, but are not yet available.

In the Metropolitan District the members of the Dental Society have carried out a regular system of examination of children's teeth. In connection with this, and also in connection with the general system of medical inspection, free treatment is provided for those children whose parents are unable to pay.

8. **Tasmania.**—The credit of being the first State in the Commonwealth to provide for the medical inspection of schools and school children in a systematic way rests with Tasmania, where, under the direction of the Chief Health Officer and the Director of Education, about 1200 children attending schools in Hobart were inspected in 1906. The general examination was based upon that of the Royal Commission on Physical Training (Scotland) of 1903, but considerable modifications and adaptations were found necessary in order to fit it to immediate requirements. No attempt was made to secure anthropometric observations beyond those of unquestionable medical value, and in only one case (colour of eyes) were any purely anthropological data collected. The sociological data obtained (parental occupation, etc.) were found of much service, and produced some interesting comparative results.

Medical inspection of school children as now existing in Tasmania is carried out by three medical officers, each controlling respectively one of three areas, which for medical inspection purposes are known as Hobart District, Launceston District, and the Country Districts of the State. Additional assistants in the persons of school nurses have been appointed to follow up the work of the Medical Inspectors. Reports on the physical condition of the children are furnished, and parents advised when medical attention is considered necessary, and in the case of parents unable to pay for such attention, orders are given for free treatment at the hospital. From March, 1907, to 31st December, 1910, the total number of children examined in State schools was 20,961, of which 11,869 were examined in country schools, 5870 in Hobart and 3222 in Launceston. During 1911, 3655 children were examined by Drs. Clark and Ormiston, 2214 by the latter, who found advanced adenoids affecting 5.2 per cent., defective sight 4.3 per cent., and defective hearing 2 per cent. of the children; while Dr. Clark out of 1441 children found that 430, or nearly 30 per cent., were suffering from various defects to an extent requiring medical treatment in order to fit them for their educational studies. Of these 430 children 208 had severe eye defects, and 153 were suffering from advanced adenoids. Out of the 2214 children examined by Dr. Ormiston 8 were found to be mentally deficient in the true sense of the term, while 7 others, though regarded as practically bordering on that condition, were described as unable to profit much by ordinary school methods. With regard to dental condition, all the Medical Inspectors agree that the teeth of the children of Tasmania seem to be uniformly bad.

SECTION XXXI.

THE COMMONWEALTH SEAT OF GOVERNMENT.

1. **Introductory.**—In each of the two previous issues of the Year Book (Nos. 4 and 5) information was given in this section as to the events leading to the selection of the Federal Capital Territory, and as to the necessary legislation and the progress of operations in connection with the establishment of the capital city. The physiography of the Territory was dealt with *in extenso*, and topographical and contour maps accompanied the letterpress, as well as reproductions of the premiated designs for the laying out of the city. Considerations of space, however, preclude the repetition of this information.

2. **Progress of Work.**—The design for the laying out of the capital city having been approved, the ground survey is being proceeded with. Operations at the Cotter Dam and Redhill reservoir are in active progress, and the temporary bridge over the Murrumbidgee River is approaching completion. Numerous contracts have been let, and over 500 men are now engaged on roads and engineering works and on the building works at Acton and Duntroon.

3. **Lands in the Territory.**—As a considerable portion of the Commonwealth lands within the Territory is not required in connection with the establishment of the city, such areas are being made available for leasing under certain conditions. Leases of a purely temporary character will be granted for certain business and residential allotments on the site of the capital city. A scheme is under consideration for subdividing and leasing land outside the City area. It is not intended, at first, to grant leases for long periods, but to restrict them to terms of a few years, under conditions which will ensure the control and eventual extermination of rabbits and other pests. Reference has already been made on page 329 to the area of alienated, acquired and leased land within the Territory. In this connection it may be added that the precise area of the Territory cannot be accurately determined at present, pending the completion of the survey of the boundary between the Territory and New South Wales.

4. **Lands at Jervis Bay.**—The Government of New South Wales has agreed to submit to the State Parliament a Bill to amend the Seat of Government Surrender Act 1909, to provide for a transfer to the Commonwealth of about 18,000 acres of land at Jervis Bay, to be used for the Naval College and other purposes, and when such action shall have been effected a consequential Acceptance Bill will be submitted to the Commonwealth Parliament.

5. **Railways.**—The permanent survey of the proposed railway from Queanbeyan to the city site having been completed, the line is now under construction. The work on the New South Wales side of the boundary between Territory and State is being carried out by the Railway Commissioner of that State, that within the Territory being carried out by the New South Wales Railways Construction Branch on behalf of the Commonwealth Government. The latter has agreed to repay the outlay to the New South Wales Government with 5 per cent. added.

The trial location survey of the line between Jervis Bay and the Federal Capital City is in progress.

6. **Educational Facilities.**—As the result of a conference between the Administrator of the Territory and the New South Wales Education Department, it is proposed that the latter shall, for the time being, continue the administration of education in the Territory, the expenditure involved to be refunded annually by the Commonwealth to the State.

7. **Revenue and Expenditure.**—The present revenue from properties within the Federal Capital Territory (including that from rates, which amounts to £2682) is estimated at £5000. The expenditure up to date on works and other matters relating to the Federal capital, amounts to approximately £255,000, inclusive of the Naval and Military Colleges, and of expenditure incidental to the selection of a site for the seat of government.

8. **Military College.**—In June 1911, a Military College was opened at Duntroon for occupation by the cadets and staff. Particulars regarding the establishment of this College may be found in Year Book No. 4 (p. 1159). Previous reference has been made to it in the section of this book dealing with Defence (see page 1060).

9. **Inauguration of the Capital City.**—On the 12th March, 1913, the official ceremony to mark the initiation of operations in connection with the establishment of the Seat of Government was carried out. Foundation stones were laid by the Governor-General, the Prime Minister, and the Minister for Home Affairs. At this ceremony the selection of "Canberra" as the name of the capital city was announced by Lady Denman, the wife of the Governor-General.

SECTION XXXII.

THE NORTHERN TERRITORY.

§ 1. Area and Population.

1. **Introductory.**—Upon the extension of New South Wales westward to the 129th meridian in 1827, the Northern Territory was comprised within that colony (see Year Book No. 4, page 16), and in 1863 was annexed by Royal Letters Patent to the province of South Australia. With the adjacent islands, it was transferred to the Commonwealth on 1st January, 1911.

2. **Area and Boundaries.**—The total area of this Territory is 523,620 square miles, or 335,116,800 acres. Its length from north to south is about 900 miles, while its breadth from east to west is 560 miles. Its eastern boundary, dividing it from Queensland, is the 138th meridian of east longitude; and its western boundary, separating it from Western Australia, the 129th meridian. Its southern boundary is the 26th parallel of south latitude, dividing it from South Australia. The northern boundary is the coast line of those parts of the Indian Ocean known as the Timor and Arafura Seas. Near the mouth of the Wentworth River, in the Gulf of Carpentaria, the coast line is met by the eastern boundary; at Cape Domett, near Cambridge Gulf, the western boundary cuts the northern coast line. The length of coast line is about 1040 miles, or 503 square miles of area to one mile of coast line; an exact survey has, however, not yet been made.

3. **Population.**—(i.) *Character.* In 1881 there were 670 Europeans in the Territory, and at the end of 1911 the number was estimated at 1730. The Chinese population, at its maximum during the years of railway construction, 1887 and 1888, has gradually dwindled, the estimate for 1911 being 1302. Japanese, first recorded in 1884, increased up to the year 1898, falling again after five years. The highest recorded population, excluding aborigines, was 7533 in 1888; the estimate for 1912 was 3475. The year 1911 was the first in which the population was dominated by the European race. A thirty years table of population, distinguishing races, will be found on page 1154 of the Commonwealth Official Year Book, No. 4. Subsequent to the census of 1911, a revision of the estimates, back to 1901, was made. The results are shewn in the following table:—

**POPULATION OF NORTHERN TERRITORY (EXCLUSIVE OF ABORIGINES),
1901 to 1912.**

Year ended 31st December.	Male.	Female.	Total.	Year ended 31st December.	Male.	Female.	Total.
1901 ...	3,999	674	4,673	1907 ...	3,095	642	3,737
1902 ...	3,847	627	4,474	1908 ...	2,963	609	3,572
1903 ...	3,582	652	4,234	1909 ...	2,927	576	3,503
1904 ...	3,514	692	4,206	1910 ...	2,738	563	3,301
1905 ...	3,368	678	4,046	1911 ...	2,662	586	3,248
1906 ...	3,248	656	3,904	1912 ...	2,854	621	3,475

The census population (3rd April, 1911) was 2734 males, 576 females; total, 3310. The estimate for for 31st December, 1912, was 2854 males, 621 females; total, 3475.

(ii.) *Movement of Population.* The following is a summary of movement of population in 1911:—

MOVEMENT OF POPULATION, NORTHERN TERRITORY, 1911.

Europeans—		Europeans—		Excess—	
Inwards, oversea	272	Outwards, oversea	231	Emigration over	
Births	12	Deaths	22	immigration ...	28
Others—		Others—		Deaths over births	11
Inwards, oversea	140	Outwards, oversea	209		
Births	45	Deaths ...	46		
Increase	469	Decrease	508	Net loss	39

The immigration and emigration of the Territory from 1880 to 1911 is shewn in the following table:—

MIGRATION, NORTHERN TERRITORY, 1880 to 1911.

Year.	Immigra- tion.	Emigra- tion.	Year.	Immigra- tion.	Emigra- tion.	Year.	Immigra- tion.	Emigra- tion.
1880* ...	2,759	273	1891 ...	442	657	1902 ...	354	543
1881 ...	354	1,135	1892 ...	505	549	1903 ...	421	701
1882 ...	949	616	1893 ...	335	381	1904 ...	520	575
1883 ...	762	582	1894 ...	223	410	1905 ...	578	758
1884 ...	763	790	1895 ...	453	356	1906 ...	457	623
1885 ...	855	664	1896 ...	553	362	1907 ...	595	637
1886 ...	2,795	2,416	1897 ...	541	611	1908 ...	510	652
1887 ...	3,667	1,409	1898 ...	637	522	1909 ...	544	592
1888 ...	1,563	1,025	1899 ...	461	372	1910 ...	453	621
1889 ...	695	1,514	1900 ...	346	392	1911 ...	412	440
1890 ...	488	886	1901 ...	338	355			

* From 17th August to end of year.

(iii.) *The Aborigines.* An account of the Australian aborigines, by Dr. W. Ramsay Smith was given in Year Book No. 3 (pp. 158-176). The interior of the continent is the most thickly populated by the natives, but it is believed that they are rapidly dying out. In these regions, remote from contact with other races, the native has maintained his primitive simplicity, and furnishes an interesting subject of study to the anthropologist and ethnologist. At the census of 1911, full-blooded aborigines in the employ of whites, and those who were living in a civilised or semi-civilised condition in the vicinity of European settlements, were enumerated—the males being 743, females 480; total, 1223. It has been estimated that the total black population of the Territory is upwards of 20,000.

§ 2. Historical.

1. *Exploration and Colonisation.*—(i.) *Coastal Surveys.* The coast was surveyed by King in 1817, and by Wickham and Stokes in 1838 and 1839. Port Darwin, the site of Darwin, the present capital, was discovered in the latter year.

(ii.) *Exploration of Interior.* Leichhardt traversed a great deal of the country in 1844-5, journeying from Queensland to Port Essington. Gregory started from Point Pearce in 1855, and reached Brisbane. Minor explorations were also successfully undertaken.

(iii.) *Crossing the Continent.* In 1861, Stuart began his transcontinental journey from Adelaide, and reached the north coast in July, 1862. His track has become the main route, and along it the telegraph line is constructed.

(iv.) *Demarcation of Boundaries.* Upon the extension westwards of New South Wales, in 1827, the Territory was included in that colony, and remained so until 1863, when it was added to South Australia, which in 1836 had been created a separate province.

(v.) *The Military Settlement.* A military post was formed on Melville Island in 1825. This was transferred in 1827 to Raffles Bay, and a few years later to Port Essington. Little public attention was given to the station, and no attempt at colonisation was made. It was abandoned in 1849.

2. Control by South Australia.—(i.) *Transfer.* As a result of representations to the Imperial Government by South Australia, the Territory was incorporated with that State in 1863, and administered through a Government Resident located at Port Darwin up to 31st December, 1910. Early attempts at settlement failed. Ultimately, Port Darwin was chosen for the site of the capital, and Palmerston founded.

(ii.) *Land Legislation.* The South Australian Government's land legislation was framed to attract settlers, viz., low rents with easy entry and unencumbered holding over long periods; or grant of fee simple at low price. Special arrangements were made to foster tropical agriculture, including the establishment of botanic gardens at Port Darwin, for observation and experiment. Large "runs" were established on the northern well grassed and watered pastures.

(iii.) *Mining.* The survey and construction of the overland telegraph revealed the auriferous nature of the country, and gold and other minerals were discovered in various localities. The Government regulated the area of claims and the conditions upon which they were held.

(iv.) *Cessation of Supervision by South Australia.* Progress was not as marked as was desired, the Territory being thought capable of more rapid development. Accordingly the Federal and State Governments agreed upon a surrender by the latter as from 1st January, 1911, since which date the Territory has been a dependency of the Commonwealth.

3. Transfer to Commonwealth.—(i.) *The Agreement.* An agreement of transfer, afterwards ratified by the respective Parliaments, was made between the two Governments. In accordance with a proclamation issued in the terms of the Commonwealth Acceptance Act (No. 20 of 1910), the transfer was effected on 1st January, 1911.

(ii.) *The Northern Territory Acceptance Act.* By the Commonwealth Act, the agreement is ratified and approved, the Territory is accepted together with the Palmerston and Pine Creek Railway; laws and courts of justice remain in operation, powers and functions of magistrates and officials remain vested; estates and interests continue upon the same terms; trade with Australian States is declared free. The Commonwealth assumes responsibility for the State loans in respect of the Territory, paying the interest yearly to the State, providing a sinking fund to pay off the loans at maturity,

and paying off the deficit in respect of the Territory. It also purchases the Port Augusta to Oodnadatta railway, and agrees to complete the construction of the trans-continental railway from Port Darwin to Port Augusta.

(iii.) *The South Australian Surrender Act.* The State Act approves and ratifies the agreement surrendering the Territory.

(iv.) *The Northern Territory (Administration) Act 1910.* The Act provides for Government authorising the appointment of an administrator and officials. South Australian laws are declared to continue in force as laws of the Territory and certain Commonwealth Acts to apply. Power is given to the Governor-General to make Ordinances having the force of law.

(v.) *Administration.* A Resident Administrator, vested with supreme authority in internal affairs, was appointed in the Department of the Minister for External Affairs in February, 1912. Many other important administrative offices have also been filled.

(vi.) *Legislation.* The main provisions of the Ordinances passed are as follows:—The powers and duties of the Administrator vested in the appointee, include custody of the public seal, appointment and suspension of officials, and execution of leases of Crown lands. He is assisted by a council of advice, not exceeding six, and meeting monthly. A Supreme Court with original and appellate jurisdiction is instituted, the method of appointment of the Judge is prescribed, and provision is made for trial by jury, and for the registration and summoning of jurors. A Sheriff, a Registrar-General, and a Health Officer are provided for, also the registration of births, marriages and deaths, and of deeds and documents. District Councils are authorised to assess land values and levy rates on unimproved value. Custody and control of aborigines with extensive powers of supervision are vested in the Chief Protector. Birds protected during the year, and during part of the year, are scheduled. Crown lands are classified, and their mode of acquisition, entry and holding defined. Shop assistants are to have a weekly half holiday, and the establishments must be closed at a certain time. Mining is encouraged by the provision of rewards for the invention of new processes, and the discovery of valuable deposits and of new mineral fields; subsidization of the industry and the issue of prospecting licenses are also provided for. Licences to search for mineral oil, and leases of land for the working of the industry are available. A Board is constituted for the purpose of making advances to settlers, who intend to improve and stock their holdings, to purchase farm implements, plant, etc., or to pay off mortgages, the rate of interest and terms of repayment being set out.

§ 3. Physiography.

1. **Tropical Nature of the Country.**—The Territory is within the torrid zone, with the exception of a strip $2\frac{1}{2}$ degrees wide, which lies south of the Tropic of Capricorn.

2. **Contour and Physical Characteristics.**—The low flat coast line seldom reaches a height of 100 feet. Sandy beaches and mud flats, thickly fringed with mangroves, prevail. Sandstone, marl, and ironstone form the occasional cliffy headlands. The sea frontage of more than 1000 miles is indented by bays and inlets and intersected by numerous rivers, many of which are navigable for considerable distances from their estuaries.

The principal features of the coast line are enumerated in Year Book No. 1, p. 66; the rivers in Year Book No. 2, p. 76; the mountains in Year Book No. 3, p. 67; the lakes in Year Book No. 4, p. 77; the islands in Year Book No. 5, pp. 71, 72, and the mineral springs in the present volume, p. 65.

Inland, the country is generally destitute of conspicuous landmarks. From the coast there is a general rise southwards to the vicinity of the 17th or 18th parallel of

south latitude, where the higher lands form the watershed between the rivers that flow northwards to the sea, and those that form the scanty supply of the interior systems. Towards the centre of the continent the land over a wide area is of considerable elevation, and there are several mountain ranges, generally with an east and west trend.

§ 4. Climate.

On the northern coast, as in the tropics generally, there are two main climatic divisions—the wet season, November to April; and the dry season, May to October. The changes of season are uniform and regular. Immediately after the vernal equinox, the wet season is heralded by the cessation of the east-south-easterly monsoon, which gives place to calms and light variable winds. Intensely hot weather prevails for a few days, thunder-clouds gathering and increasing daily until they burst in heavy thunderstorms accompanied by hurricanes, and increasing in strength and frequency until the end of November, when they become of almost daily occurrence, about an inch of rain falling during each storm. During December the north-west monsoon sets in gradually, with rain nearly every day, and increasing in force until about the end of January. At this period of the year the wet season penetrates into the heart of the continent. This monsoon dies away at the autumnal equinox, and is succeeded by light and variable winds till the end of April, when the dry season commences with the setting in of the south-east monsoon. Nearly the whole of the rainfall occurs in the summer months.

§ 5. Fauna and Flora.

1. **Native Animals.**—The ordinary types of Australian fauna inhabit the territory. As elsewhere on the continent, the higher *Theria* are rare. There are many genera of marsupials, and individuals are numerous. The birds also are typically Australian, with brilliant plumage, and not generally gifted with song. Crocodiles and fresh-water tortoises frequent the northern rivers. There are some species of snakes, mostly non-venomous, the most numerous being the harmless python. Frogs abound, the water-holding frog being common in Central Australia. The rivers contain many varieties of fresh-water fish. The molluscan fauna of the coast are mostly carnivorous, the vegetable feeders being very poorly represented, probably on account of the dearth of seaweed. Land and fresh-water shellfish are not abundant. Among insects, many beautiful butterflies thrive in the warm damp atmosphere. Beetles also are strongly represented. The white ant is a pest, very few timbers being immune from its ravages. Anthills in the Territory sometimes attain a height of twenty-five feet and a diameter of ten feet. Another destructive insect, particularly active and mischievous inland, is the borer. Mosquitoes and sandflies are very troublesome, particularly from January to April. There are not many crustaceans.

2. **Imported Stock.**—Buffalo thrive in the Territory. At Port Essington they are numerous, and there are large herds on Melville Island. Timor ponies have also been introduced. Imported sheep and horned cattle thrive on the stations.

3. **Protection of Fauna.**—Ruthless destruction of native birds is prohibited. An ordinance (No. 1 of 1912) gives the Administrator power to declare that any bird is protected; and provides that permits to export protected birds, or the skins or eggs of such birds, will only be issued subject to such conditions as the Administrator directs.

4. **Flora.**—The vegetation is tropical, many of the forms belonging to the Malayan and Oceanic regions. The timber trees are not of great commercial value, but in the coastal regions tropical vegetation grows luxuriantly to the water's edge. The indented arms of the coast are thickly fringed with the mangrove. On the ranges, pines, fig trees, and orange trees flourish. The Roper River drains extensive forest lands. Leichhardt pines and palms form the vegetation of the tableland, which stretches across the Territory about the 14th degree of south latitude. On the higher steppes there are a few varieties of eucalyptus, and many fibre plants are also indigenous. On the wide

expanses of plain country of the interior, there is little vegetation, tree growth being very scanty, consisting chiefly of stunted eucalypts, such as the gimlet gum, black box, and desert sheoak. In the north-western districts there is an almost entire absence of lichens and mosses, though ferns are plentiful in the vicinity of the Victoria River. The following orders are well represented:—*Euphorbiaceæ*, *Compositæ*, *Convolvulaceæ*, *Rubiaceæ*, *Goodeniaceæ*, *Leguminosæ*, *Urticæ*.

§ 6. Production.

There is no great home consumption of the articles produced in the Territory, the greater part being exported oversea and to the States of the Commonwealth.

1. **Stock.**—The spacious, well-grassed “runs” of the Territory are suitable for horse and cattle breeding. It is anticipated that the cattle trade with the East will develop. Large numbers are overlanded to neighbouring States, which also take considerable quantities of horse hides. The number of stock on 31st December, 1911, was:—

LIVE STOCK, NORTHERN TERRITORY, 31st DECEMBER, 1911.

Horses.		Cattle.		Sheep.		Pigs.
21,407	...	459,780	...	50,983	...	1,500

Dairying as an industry is non-existent. The abundant indigenous herbage is, however, well suited for stock, and the making of hay and ensilage would ensure the development of the industry.

2. **Mining.**—Considerable quantities of the precious and commercial metals are mined. The discovery of gold and tin in various localities, and the measure of success that has attended their working, indicate scope for development.

(i.) *Mineral production.* Both alluvial and reef gold are found, and there are several batteries and cyanide plants. The quantity and value of gold produced during 1911 was 7277 fine ounces, valued at £30,910. Other minerals raised during 1911 were:—163 tons of copper ore, valued at £1470; 49 tons of wolfram ore, valued at £4048; and 239 tons of tin ore valued at £22,900. Bismuth valued at £25 was also produced. The total value of minerals raised during 1911 was £59,353.

(ii.) *Mineral Production, 1894 to 1911.* The following table shews the total mineral production for 18 years.

VALUE OF MINERAL PRODUCTION, NORTHERN TERRITORY, 1894 to 1911.

Year.	Gold.	Tin Ore.	Wolfram.	Silver Lead.	Copper Ore.	Smelter Product (C'pp'rBase)	Total Value.
	£	£	£	£	£	£	£
1894 ...	109,699	1,251	...	115	1,204	...	112,269
1895 ...	102,816	1,815	...	...	410	...	105,041
1896 ...	81,210	590	...	1,230	...	...	82,970
1897 ...	81,210	10	...	...	...	...	81,220
1898 ...	84,789	100	...	...	...	...	84,889
1899 ...	63,565	180	...	...	...	...	63,745
1900 ...	67,988	774	...	522	14,095	...	83,379
1901 ...	76,609	2,105	175	20	2,345	...	81,254
1902 ...	70,325	5,985	...	...	1,813	...	78,123
1903 ...	61,600	10,773	...	...	55	...	72,428
1904 ...	3,983	27,360	2,500	1,386	...	27,029	62,258
1905 ...	30,971	25,877	2,573	1,303	6,677	9,659	77,060
1906 ...	54,225	33,837	7,144	2,355	13,154	35,606	146,665*
1907 ...	21,928	41,365	11,451	2,093	13,143	1,888	91,868
1908 ...	23,943	35,876	1,925	30	5,413	2,555	70,042†
1909 ...	24,148	32,741	4,105	...	1,400	2,342	64,736
1910 ...	21,711	31,113	6,686	...	1,196	...	60,706
1911 ...	30,910	22,900	4,048	...	1,470	...	59,353‡

* Includes santalite valued at £140, and amblygonite valued at £204.
 † Includes bismuth, valued at £25.

‡ Includes bismuth, valued at £25.

(iii.) *Employment of Miners, 1894 to 1911.* The following table shews employment in mining for eighteen years, distinguishing Chinese:—

MINERS, NORTHERN TERRITORY, 1894 to 1911.

Year.	Europeans.	Chinese.	Total.	Year.	Europeans.	Chinese.	Total.
1894 ...	65	2,055	2,120	1903	91	1,202	1,293
1895 ...	111	2,032	2,143	1904	189	1,158	1,347
1896 ...	193	1,678	1,871	1905	161	1,077	1,238
1897 ...	153	1,633	1,786	1906	179	1,018	1,197
1898 ...	107	1,456	1,563	1907	208	958	1,166
1899 ...	114	1,372	1,486	1908	150	674	824
1900 ...	72	1,432	1,504	1909	190	630	820
1901 ...	58	1,280	1,338	1910	140	602	742
1902 ...	47	1,160	1,207	1911	101	575	676

(iv.) *Mining Accidents, 1900 to 1911.* In 1911 five mining accidents were recorded, resulting in the deaths of four Chinese and serious injury to one Chinese. There were no serious accidents in 1910. During the ten years preceding, ten fatal accidents and eight cases of serious injury were recorded, the majority of the victims being Chinese.

3. **Pearl Shell.**—In 1884 mother-of-pearl shell was discovered in the harbour of Port Darwin. Difficulty in working, principally through heavy tides and muddy water, retarded the development of the industry for many years. Latterly, however, the opening up of new patches has led to a revival. In 1911, thirty-one boats were engaged, valued, with their equipment, at about £10,000; 138 men were employed. Seventy-one tons of pearl shell were obtained, valued at £15,666. Bêche-de-mer valued at £1451 was also raised.

§ 7. Commerce and Shipping.

1. **Trade.**—The following table shews the total trade of the Territory for 10 years from 1901 to 1910:—

VALUE OF IMPORTS AND EXPORTS, NORTHERN TERRITORY, 1901 to 1910.

	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£	£	£	£	£
Imports ...	108,886	107,217	125,244	113,461	86,878	74,659	78,996	68,905	57,994	52,398
Exports ...	302,931	191,558	178,266	235,650	216,279	254,222	345,721	241,028	278,555	269,063
Total Trade	411,817	298,775	303,510	349,111	303,157	328,881	424,717	309,933	336,549	321,461

No record is now kept of the direction of trade between the Commonwealth States and Territories. It is, therefore, impossible to give the total imports and exports of the Northern Territory for years later than 1910. In 1911 the imports from places outside Australia were valued at £16,920, an increase of £3966 on the previous year. The exports to oversea countries were valued at £48,468, a decrease of £12,983 as compared with 1910.

From 1881 to 1910, the annual average trade in five-year periods was :—

VALUE OF IMPORTS AND EXPORTS, NORTHERN TERRITORY, 1881 to 1910.

Period.	Average Annual Imports.	Average Annual Exports.	Period.	Average Annual Imports.	Average Annual Exports.
	£	£		£	£
1881-1885	125,600	92,727	1896-1900	127,489	158,978
1886-1890	286,099	113,156	1901-1905	108,337	224,937
1891-1895	109,704	177,463	1906-1910	66,590	277,718

2. **Principal Exports.**—The principal articles of export during the three years 1908 to 1910 were :—

PRINCIPAL ARTICLES OF EXPORT, NORTHERN TERRITORY, 1908 to 1910.

Year.	Wolfram.		Copper.		Cattle.		Bêche-de-mer.		Tin Ore.		Gold.		Dried Fish.		Horses.	
	Qua.	Val.	Qua.	Val.	No.	Value.	Qua.	Val.	Qua.	Val.	Qua.	Val.	Qua.	Val.	No.	Val.
	tons	£	tons	£		£	tons	£	tons	£	ozs.	£	lbs.	£		£
1908	8	542	413	5,020	31,636	142,998	24	1,272	447	35,990	7,074	22,425	83,944	1,697	1,459	14,395
1909	44	4,294	143	2,357	26,783	121,172	38	1,906	416	32,306	7,164	23,526	63,605	1,091	83	525
1910	65	7,081	124	1,113	38,326	161,605	30	1,303	351	34,308	6,713	21,632	33,672	591	829	14,070

Year.	Pearl Shell.		Hides and Horns.	Wool.		Tortoise Shell.		Copper Matte.	
	Qua.	Value.	Value.	Quantity.	Value.	Qua.	Value.	Qua.	Value.
	tons.	£	£	lbs.	£	lbs.	£	tons.	£
1908	...	58	7,578	4,831	148	6	251	78	1,949
1909	...	58	10,085	6,586	142	3	376	11	300
1910	...	55	10,030	3,816	213,964	5,915	222	124	2,989

The total exports for 1911 are not available, only the articles sent beyond the Commonwealth being now recorded. The value of principal articles exported overseas for the years 1910 and 1911 are as follows:—Bêche-de-mer, 1910, £1303; 1911, £1451. Gold, 1910, £3508; 1911, £1320. Tin concentrates, 1910, £33,566; 1911, £23,475. Wolfram, 1910, £6899; 1911, £5791. Pearlshell, 1910, £10,030; 1911, £15,666.

3. **Shipping.**—The Territory's overseas commerce is carried in British and Japanese bottoms. One of the British lines maintains a monthly service, other lines are irregular. Coastal shipping is chiefly in Australian vessels. There is a small local trade, a steamship running between Port Darwin, Port McArthur, Daly River, Victoria River, and Wyndham (Western Australia). The shipping of the Territory in 1911 was:—Entered, 71 vessels, tonnage 130,178; cleared, 71 vessels, tonnage 130,178. Of the former, 4 vessels of 5848 tons arrived from Hong Kong; 12 vessels, of 20,934 tons, from Straits Settlements; 3 vessels, of 5718 tons, from Dutch East Indies; 13 vessels, of 33,160 tons, from Japan; and 39 vessels, of 64,518 tons, from the Commonwealth States. The nationality of 65 of the vessels was British and of 6 foreign. Four of the vessels outward cleared for Hong Kong, the tonnage being 5848; 12, of 20,934 tons, departed for Straits Settlements; 3, of 5718 tons, for the Dutch East Indies; 12, of 31,321 tons, for Japan; and 40, of 66,357 tons, for other Commonwealth ports.

4. **Shipping, 1881 to 1910.**—The average annual shipping of the Territory from 1881 to 1910 is shewn below in 5-year periods :—

SHIPPING, NORTHERN TERRITORY, 1881 to 1910.

Period.	Arrivals.		Departures.	
	Average Yearly No. of Vessels.	Average Annual Tonnage.	Average Yearly No. of Vessels.	Average Annual Tonnage.
1881—1885 ...	72	71,814	72	71,692
1886—1890 ...	95	94,452	103	94,724
1891—1895 ...	75	81,128	73	81,090
1896—1900 ...	71	88,284	70	88,244
1901—1905 ...	63	93,751	63	91,556
1906—1910 ...	87	128,502	88	128,408

§ 8. Internal Communication.

1. **Railways.**—Under the agreement ratified by the Act the Commonwealth is to construct the Northern Territory portion of the transcontinental railway line (connecting Adelaide and Darwin, *via* Port Augusta).

The Northern line from Adelaide terminates at Oodnadatta, about 100 miles south of the southern boundary of the Territory. The only line at present in the Territory is one from Darwin to Pine Creek, a length of 145½ miles, of 3 ft. 6 in. gauge; and Pine Creek is distant about 1140 miles from Oodnadatta. It is stated that this transcontinental railway would bring London within seventeen days of Adelaide. The Commonwealth also acquired on 1st January, 1911, the property in the line from Port Augusta to Oodnadatta; but the line is at present being worked under the control of the South Australian Railway Commissioner, by agreement between the Commonwealth and South Australian Governments.

2. **Posts.**—The principal mail services are as follows :—

(i.) *Marine.* Postal communication is maintained between Sydney, Melbourne, and Adelaide, *via* North Queensland ports. The service extends to China and Japan. There are three lines of service—two of the shipping companies being British, and one Japanese. The two former are subsidised at poundage rates, the latter at Postal Union rates. One of the British services is monthly, the others are irregular. There is also a quarterly contract service between Darwin and Boroloola, calling half-yearly at Roper River; and a service every two months between Darwin and Wyndham, on the estuary of Ord River, in the north-east of Western Australia. These are subsidised according to agreement for three years, the amount for the first service being £350; and for the second, £125 per voyage.

(ii.) *Inland.* Posts are also despatched into the interior of the Continent. One route is from the Katherine Telegraph Station southwards as far as Renner Springs, and then eastwards to Anthony Lagoon, where the Queensland mailman is met. The service is maintained with difficulty, on account of the many hardships caused by the alternations of extreme drought and flood.

Other inland routes are served, and there is a frequent service in Darwin.

3. **Telegraphs.**—The transcontinental telegraph line, covering a length of 2230 miles, was completed on 2nd August, 1872, at a cost of nearly half-a-million sterling. The line runs in a northerly direction from Adelaide to Darwin, whence telegraphic communication is provided with Asia and Europe, *via* Banjoewangie (Java), Singapore, and Madras.

Between Darwin and Banjoewangie the submarine cable is duplicated.

§ 9. Finance.

1. **Revenue and Expenditure, 1911-12.**—In the Commonwealth finance statement for 1911-12, separate accounts are given for Northern Territory administration. The following shews the receipts and expenditure for the financial year named:—

REVENUE AND EXPENDITURE, NORTHERN TERRITORY, 1911-12.

REVENUE.		£	EXPENDITURE.—cont.		£
Customs and Excise...		12,562	Marine Office—		
Postal, Telegraph & Telephone		2,895	Salaries and contingencies...		816
Railways ...		13,483	Stock and Brands—		
Territorial ...		11,328	Salaries and contingencies...		1,420
Land and Income Tax		1,678	Botanic Gardens—		
Miscellaneous		4,736	Salaries and contingencies...		756
Deficiency on year's transactions		364,368	Survey—		
			Salaries and contingencies...		2,384
		411,050	Goldfields and Mining—		
			Salaries and contingencies...		10,682
			Education—		
			Salaries and contingencies...		721
			Railways—		
			Salaries and contingencies...		18,768
			Public Works Staff—		
			Salaries and contingencies ...		1,441
			Works and Buildings		3,180
			Miscellaneous		10,444
			Administrative Office—		
			Salaries and contingencies...		1,629
			Interest and Redemption (ex-		
			cluding Port Augusta rail-		
			way)—		
			Interest on loans ...		159,662
			Contribution to sinking fund		8,869
			Interest on loans Port Augusta		
			railway		107,824
			Contribution to sinking fund,		
			Port Augusta railway		8,400
			Extraordinary maintenance		3,202
			Buildings, roads, farms, etc.		22,326
			Port Augusta railway		401
			Launch		1,100
			Audit		60
					411,050
EXPENDITURE.					
Trade and Customs—					
Salaries and contingencies ...		1,640			
Rent, Repairs, etc.		96			
Postmaster-General—					
Salaries and contingencies ...		11,586			
Mails		4,016			
Rent, Repairs, etc.		12			
Administrator's Office—					
Salaries and contingencies ...		4,410			
Aboriginal Affairs—					
Salaries and contingencies ...		8,025			
Agriculture—					
Salaries and contingencies ...		528			
Police—					
Salaries and contingencies ...		9,708			
Gaol—					
Salaries and contingencies ...		2,247			
Charitable Institutions—					
Salaries and contingencies ...		4,107			
Board of Health—					
Salaries ...		35			
Law Officers—					
Salaries and contingencies ...		555			

The Commonwealth received £151,513 from South Australia, being the credit balance of Northern Territory funds, but assumed responsibility for interest on loans and redemptions.

2. **Loans.**—The first loan on Northern Territory account was floated in London in 1876; the nominal amount was £75,000, at 4 per cent., due date 1st January, 1916. The public debt on 30th June, 1912, was £3,431,836. The following is a summary:—

PUBLIC DEBT, NORTHERN TERRITORY, 30th JUNE, 1912.

Principal.		Rate.		Annual Interest.
£		%		£
27,216	...	3	...	817
154,992	...	3½	...	5,425
71,945	...	£3 12s. 3d.	...	2,599
1,798,383	...	3¾	...	67,439
1,379,300	...	4	...	55,172
Total ...	3,431,836	—	...	131,452

§ 10. Land Tenure.

1. Present Policy.—The system of land settlement in the Territory will be found fully described in the chapter "Land Tenure and Settlement," see pages 293, 294 *supra*. Prior to the transfer of the Territory to the Commonwealth on 1st January, 1911, the sale and occupation of lands were regulated by the South Australian Legislature in Statutes applying particularly to the Territory. Under the Commonwealth Government a complete reorganization is being effected. Two Lands Ordinances of 1912 declare the present land policy and define the conditions. A leasehold system only is provided for, and no further alienation of crown lands is permitted, except in pursuance of existing agreements. A Board, consisting of the Director of Lands, the Director of Agriculture, and the Chief Surveyor, classifies the lands and fixes the rents. The land thus classified and appraised is leased in blocks, the maximum area ranging from 300 square miles of first class pastoral to 1280 acres of first class agricultural land. The term of pastoral and miscellaneous leases is 21 or 42 years, all other leases are to be in perpetuity, making them almost equivalent to freeholds, but with re-appraisal of rent values every 14 years in the case of town lands, and every 21 years in the case of agricultural and pastoral lands. The conditions are of a very favourable nature, with low rents and elastic conditions of tenure. Twenty-six farms have already been surveyed on the Daly River, varying in size from 290 to 620 acres. Applications from intending settlers have been received, and the allocation of the leases is proceeding. The Board is dealing also with an area in the vicinity of the Pine Creek railway, about 70 miles from Darwin.

2. Number of Holdings.—The table on page 294 *supra* shews the total area under lease, license, and permit in 1901 and in each year from 1907 to 1911. At the latter date 92,045,540 acres were held under pastoral leases and permits; 667 acres under right-to-purchase leases; and 1,698,754 acres under other leases. The other leases include coal and oil permits, 1,666,560 acres; agricultural leases, 8417 acres; mineral leases, 1290 acres; mixed farming permits, 1280 acres; gold leases, 745 acres; tin-dredging permit, 400 acres; and approved applications under the Tropical Products Act 1904 (of South Australia) 20,000 acres.

SECTION XXXIII.

LABOUR AND INDUSTRIAL STATISTICS.

§ 1. Introductory.

1. **General.**—The field of Australian statistics has recently been extended by the organisation of a Labour and Industrial Branch of the Commonwealth Bureau of Census and Statistics. The functions of this branch are to carry out investigations in regard to what are commonly known as labour and industrial statistics, and the scheme of work provides for systematic investigations into the following matters:—

(a) *Trade Unionism.*—Classification of unions and members by industries; development of unions and members; the law relating to trade unions; economic characteristics of trade unionism; trades and labour councils and federation of unions.

(b) *Wages and Hours of Labour.*—The course of wages; index-numbers shewing relation between wages, prices, etc.; current wages and hours of labour—metropolitan and country—in each State.

(c) *Changes in Rates of Wages and Hours of Labour.*—The amount of the change; the number of workers affected; individual and aggregate effects of changes on amount of wages paid; method by which changes brought about.

(d) *Strikes and Lock-outs.*—Classified according to industries affected; their cause, duration, method of settlement, number affected, and direct and indirect losses; operations under Federal and State Arbitration and Conciliation and Wages Board Acts.

(e) *Unemployment.*—Classified according to industries; seasonal and general fluctuations; index-numbers of employment; average duration of employment; operations of Government Labour Bureaux; effect of non-continuity of employment on earnings; co-operation in international investigations.

(f) *Prices, Fluctuations in Exchange Value of Gold and Cost of Living.*—Import and export values, wholesale and retail prices, and house rents; special investigations for past years; index-numbers; cost of living inquiries by household budgets; international comparisons.

(g) *Investigations in regard to Principal Industries in Commonwealth.*—Numbers employed and wages paid; classification of wage-earners according to occupations and wage-groups; comparisons between rates of wages and actual earnings.

(h) *Miscellaneous.*—Reports on state of labour market in various industries and localities; immigration; operations of Labour Bureaux; legal cases affecting labour; industrial accidents; co-operation and co-partnership; review of laws affecting labour in Australia and elsewhere; review and analysis of reports issued by Australian, British, American, and Continental European Labour Departments.

(i.) *Special Subjects of Investigation.*—Concurrently with the general inquiries to be conducted by the Branch (as specified above), it is proposed that investigations shall be carried out into special matters. Each of these would extend, if necessary, over a

period as long as one or two years, and would deal with such matters as:—Apprenticeship; the working of various laws specially affecting labour; the employment of women and children; industrial education; noxious and dangerous trades; workmen's compensation and social insurance; fluctuations in employment and their effect on the conditions and efficiency of labour; the housing of the working people; the cost of production; the regulation and restriction of output.

In this section it is only proposed to present in summarised form the results of the various investigations which have been made. For more complete information reference may be made to the publications of the Labour and Industrial Branch of this Bureau.*

2. Classification of Industries. For the purpose of tabulating and publishing the results of the investigations which have been made in regard to labour organisations, unemployment, rates of wages, etc., the following industrial classification of trades and occupations has been adopted:—

CLASSIFICATION OF INDUSTRIES AND OCCUPATIONS.

I.	Wood, Furniture, Sawmill, Timber-workers, etc.	VIII.	Mining, Quarries, etc.
II.	Engineering, Shipbuilding, Smelting, Metal Works, etc.	IX.	Railway and Tramway Services.
III.	Food, Drink, and Tobacco Manufacturing and Distribution.	X.	Other Land Transport.
IV.	Clothing, Hats, Boots, Textiles, Rope, Cordage, etc.	XI.	Shipping, Wharf Labour, etc.
V.	Books, Printing, Bookbinding, etc.	XII.	Pastoral, Agricultural, Rural, Horticultural, etc.
VI.	Other Manufacturing.	XIII.	Domestic, Hotels, etc.
VII.	Building.	XIV.	Miscellaneous.

§ 2. Labour Organisations.

1. Types of Trade Unions in Australia. The types of trade unions in Australia are very diverse in character, and range from the small independent association to the large interstate organisation, which, in its turn, may be merely a branch of a British or international union. Broadly speaking, there are four distinct classes of labour organisations, viz.:—(i.) the *local independent*, (ii.) the *State*, (iii.) the *inter-State*, and (iv.) the *Australasian or International*, but a number of variations occur from each of these classes. The leading characteristics of each of these types were briefly outlined in Report No. 2 (pp. 7 to 9).

Particulars of number of unions and branches in each State, of inter-State and central labour organisations have already been given in Section XXVII. hereof (see pages 1015 to 1018).

2. Number of Unions and Membership in Industrial Groups, 1912.—The scheme of industrial classification adopted for the grouping of unions has already been referred to (see above). The following table gives the number of unions and members thereof in each State. The number of unions specified for each State refers to the number of different unions represented in each State; that is to say, inter-State or federated unions are counted once in each State in which they are represented, but sub-branches within a State are not counted. In order to avoid disclosing the affairs of individual unions, in cases where there are only either one or two unions in any group in a State, the membership is not given separately,

* See Report No. 1, "Prices, Price-Indexes and Cost of Living in Australia, 1891 to 1912." Report No. 2, "Trade Unionism, Unemployment, Wages, Prices, and Cost of Living in Australia 1891 to 1912," and "Labour Bulletin No. 1, January to March, 1913." In Appendix No. VIII to Report No. 1, the theory and technique of the formation of price-index numbers is discussed at some length, while in Appendix No. IX the question of the establishment of a basis for international comparisons of the exchange value of gold and variations in cost of living is investigated.

NUMBER OF UNIONS AND MEMBERS IN INDUSTRIAL GROUPS IN EACH STATE, 1912.

Industrial Groups.†	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
NUMBER OF UNIONS.							
I. Wood, Furniture, etc.	4	4	6	4	4	2	24
II. Engineering, Metal Works, etc.	16	20	9	12	10	4	71
III. Food, Drink, Tobacco, etc.	20	18	7	5	12	5	70
IV. Clothing, Hats, Boots, etc.	9	11	3	5	3	2	33
V. Books, Printing, etc.	7	10	3	2	6	2	30
VI. Other Manufacturing	26	21	6	12	10	5	80
VII. Building	14	14	8	7	10	7	60
VIII. Mining, Quarries, etc.	16	3	1	2	4	2	28
IX. Railway and Tramway Services	7	3	4	3	5	3	25
X. Other Land Transport	6	5	3	2	2	1	19
XI. Shipping, etc.	12	5	5	7	4	8	41
XII. Pastoral, Agricultural, etc.	3	6	1	1	2	1	14
XIII. Domestic, Hotels, etc.	8	6	2	3	6	2	27
XIV. Miscellaneous	29	25	9	10	19	7	99
Total	177	151	67	78	97	51	621
NUMBER OF MEMBERS.							
I. Wood, Furniture, etc.	6,238	4,462	1,635	1,421	3,773	*	17,529†
II. Engineering, Metal Works, etc.	12,912	9,169	1,944	3,862	1,841	225	29,953
III. Food, Drink, Tobacco, etc.	11,273	8,771	4,266	2,214	1,268	320	28,132
IV. Clothing, Hats, Boots, etc.	5,936	7,728	1,245	1,005	468	*	16,382‡
V. Books, Printing, etc.	3,355	3,166	484	*	406	*	7,420‡
VI. Other Manufacturing	12,619	7,756	578	1,699	2,026	160	24,838
VII. Building	10,719	8,185	2,174	2,236	1,893	402	25,609
VIII. Mining, Quarries, etc.	21,731	5,791	*	*	6,670	*	34,192‡
IX. Railway and Tramway Services	31,625	12,728	2,931	2,865	4,725	1,130	56,005
X. Other Land Transport	4,708	5,220	1,878	*	*	*	12,806‡
XI. Shipping, etc.	17,540	6,026	5,039	1,136	1,530	729	35,000
XII. Pastoral, Agricultural	21,624	15,621	*	*	*	*	50,726‡
XIII. Domestic, Hotels, etc.	6,008	4,869	374	1,733	1,249	*	14,233‡
XIV. Miscellaneous	26,337	17,065	13,262	7,338	5,559	430	69,991
Total	192,626	116,557	44,768	37,336	33,282	8,555	433,324

† See opposite page. * Not available for publication separately; included in State and Commonwealth Totals. ‡ Incomplete, see footnote.*

It may be seen that, with the exception of Group XIV., Miscellaneous, the membership is greatest in Group IX., Railway and Tramway Services (56,005 members), followed fairly closely by Group XII., Agricultural, Pastoral, etc., with over 50,000 members. The least important group from the point of view of membership is Group IV., Books, Printing, etc., with 7580 members. Particulars are also given in Report No. 2 (pp. 11-12) of the number of male and female members of unions and the percentage of such members on the total number of adult wage earners. Information is also given as to the development of trade unionism since 1891. Other tables shew the classification of unions according to number of members and the number of central labour organisations.

§ 3. Fluctuations in Employment and Unemployment.

1. **General.**—In Australia, but few of the trade unions pay any form of unemployment benefit, and consequently accurate and complete records of unemployment are difficult to obtain. For that reason the investigation for past years was advisedly limited to a record of the numbers unemployed at the end of each year. The results are, therefore, subject to certain limitations, inasmuch as they do not take into account variations in employment and unemployment throughout the year, due to seasonal activity and other causes.

For the above reasons it is not safe to conclude that the actual percentage returned as unemployed in past years by trade unions at the end of each year is equal to the average percentage unemployed during the year. Nevertheless, for the purpose of

making comparisons and showing tendencies over a period of years, the percentages returned as unemployed, though not exact, are the most satisfactory figures available, and the average percentages and index-numbers computed for the several States and groups of unions may be taken as denoting the true course of events with substantial accuracy.*

It may be mentioned that, in order to overcome the difficulties alluded to in regard to seasonal fluctuations, returns as to numbers unemployed are now being collected each quarter (since the beginning of the year 1913) from trade unions.

2. Number Unemployed in Various Industries, 1891 to 1912.—The subjoined table shews for each of the years specified :—

- (a) The number of unions for which returns as to unemployment are available.
- (b) The number of members of such unions.
- (c) The number of members unemployed, and
- (d) The percentage of members unemployed on the total number of members of those unions for which returns are available.

The information given in this table obviously does not furnish a complete register of unemployment. In the first place, it relates only to the number unemployed at the end of the year (see preceding paragraph hereof), and, secondly, it does not cover more than a part of the industrial field. And attention should here be drawn to the fact that the value of the comparisons which can be made is, to some extent, vitiated by the fact that returns are not available for the same unions throughout. As regards the year 1912, the table on page 112 shews that for most of the important industries, returns are available for a considerable number of unions and members. It is not unlikely, however, that particulars of unemployment are, on the whole, more generally available for those trades in which liability to unemployment is above the average of skilled occupations. Thus the building and engineering industries are heavily represented in the returns, while such comparatively stable industries as railway service are hardly represented at all. On the other hand, unskilled casual labour cannot, in the nature of the case, be well represented in the returns, which relate mainly to skilled workmen.

Thus, for some reasons, the percentage given is likely to be greater, and for other reasons less, than the true average percentage unemployed throughout the country.

UNEMPLOYMENT IN TRADES UNIONS, NUMBER AND MEMBERSHIP OF UNIONS FOR WHICH RETURNS ARE AVAILABLE, AND NUMBER AND PERCENTAGE UNEMPLOYED, 1891 to 1912.

Particulars.	1891.	1896.	1901.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
No. of Unions for which returns available ...	25	25	39	47	51	68	84	109	160	464
Membership ...	6,445	4,227	8,710	11,299	13,179	18,685	21,122	32,995	67,961	224,023
No. unemployed at end of year ...	599	457	574	753	757	1,117	1,223	1,857	3,171	12,441
Percentage of unemployed at end of year*	9.29	10.81	6.59	6.67	5.74	5.98	5.79	5.63	4.67	5.55

* See graph in § 8 hereof.

It may be seen that the extent of unemployment was greatest in 1896 and least in 1911. The significance of the figures may be better appreciated by reference to the graph in paragraph 2 in § 8 of this Section. The general trend of the graph shews a decline in unemployment since 1896. In 1912, however, there was an increase of about 0.8 per cent.

The high percentage for 1891 was largely due, no doubt, to the dislocation of industry following the maritime strike, while the still higher percentage for 1896 may be traced to the prevalent industrial depression, especially in Victoria, caused by the bank failures and the severe droughts. It may be noticed that, though the number of unions reporting

* Some description of the various methods of testing the state of the labour market may be found in the Board of Trade Memorandum on Industrial Conditions (Second Series). Cd. 2337 1904, pp. 79 to 125.

See also "Rapport Préliminaire sur la Statistique Internationale du Chômage," M. Louis Varlez, Gand, 1912.

in 1896 is the same as in 1891, the number of members shows a large reduction. This indicates that, in time of severe industrial depression, when employment is bad, the members tend to drift away from the unions. Many probably leave their ordinary places of residence in search of work elsewhere.

The accuracy of the above results as an index to the general state of employment among *all* wage-earners in Australia is confirmed by the results obtained from the censuses of 1891, 1901 and 1911, the closeness of the percentages obtained from these two independent sources for the two latter years being remarkable. A comparative table is given in Report No. 2 (p. 18).

3. Unemployment in Different Industries, 1912.—The following table shews the relative percentages unemployed in several of the fourteen industrial groups. Attention has already been drawn to the fact that some of the industries, such as Railways, Shipping, and Agriculture, are insufficiently represented. For those industries in which employment is either unusually stable or, on the other hand, exceptionally casual, information as to unemployment cannot ordinarily be obtained from trade unions. Particulars are not, therefore, shewn separately for Groups IX. (Railway, etc., Services), XI. (Shipping, etc.) and XII. (Agricultural, Pastoral, etc.), such returns as are available for these groups being included in the last group, "Other and Miscellaneous."

UNEMPLOYED IN DIFFERENT INDUSTRIES AT END OF YEAR 1912.

Industrial Group.	No. of Unions in Exist- ence.	No. of Unions Re- porting.	Membership of Unions.	No. of Unem- ployed in Unions Reporting.	Per- centage Unem- ployed.
I. Wood, Furniture, &c. ...	24	22	15,289	570	3.73
II. Engineering, Metal Works, etc. ...	71	62	26,217	1,927	7.35
III. Food, Drink, Tobacco, etc. ...	70	57	15,995	1,174	7.34
IV. Clothing, Hats, Boots, etc. ...	33	29	15,833	995	6.29
V. Books, Printing, etc. ...	30	29	8,161	231	2.83
VI. Other Manufacturing... ..	80	70	23,053	1,600	6.94
VII. Building	60	54	22,782	1,251	5.49
VIII. Mining, Quarrying, etc. ...	28	21	26,925	1,513	5.62
X. Other Land Transport	19	13	12,326	135	1.10
XIII. Domestic, Hotels, etc. ...	27	21	13,604	899	6.61
IX., XI., XII, and XIV., Other and Miscellaneous	179	86	43,838	2,146	4.80
Total	621	464	224,023	12,441	5.55

From the above figures it may be seen that the degree of unemployment varies considerably in different industries, ranging from 1.1 per cent. in Group X. (Other Land Transport, comprising chiefly carters and drivers) to 7.35 per cent. in Group II. (Engineering, Shipbuilding, Smelting Metal Works, etc.).

4. Unemployment in each State, 1912.—Any deductions which can be drawn from the data collected as to the relative degree of unemployment in the several States are subject to certain qualifications (in addition to those already stated on page 1126), inasmuch as the industries included in the trade union returns are not uniform for each State. In comparing the results for the individual States, it must therefore be borne in mind that, to some extent, at least, comparisons are being drawn between different industries and not only between different States. Nevertheless, since the industrial occupations of the people vary considerably in the several States, all comparisons between the States based on comprehensive data as to unemployment must, to some extent, suffer from the defect indicated.

UNEMPLOYMENT IN EACH STATE AT END OF YEAR 1912.

Particulars.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	C'wealth.
No. of Unions in existence ...	177	151	167	78	97	51	621
No. of Unions reporting ...	142	107	50	54	77	34	464
Membership of Unions re- porting	98,307	71,805	13,302	19,510	17,769	3,380	224,023
No. of members unemployed	4,869	4,822	614	989	1,033	114	12,441
Percentage unemployed ...	4.95	6.71	4.62	5.07	5.82	3.87	5.55

The above figures shew that, at the time indicated, the degree of unemployment was the greatest in Victoria, followed, in the order named, by Western Australia, South Australia, New South Wales, and Queensland, with Tasmania last.

4. Changes in Rates of Wages.

1. Variations in Wage Index-Numbers in Various Industries, 1891 to 1912.—The total number of different occupations for which particulars as to wages are available back to 1891 is 652. These wages relate generally to union rates, but in a few cases, more especially for the earlier years, when there were no union rates fixed, predominant or most frequent rates have been taken. The 652 occupations have been distributed over the fourteen industrial groups already specified, and index-numbers computed for each group for the whole Commonwealth. The wages refer generally to the capital town of each State, but in industries such as mining and agriculture, the rates in the more important industrial centres have been taken.

The following table shews wage index-numbers for the whole Commonwealth in each of the fourteen industrial groups during the years specified, wages in the year 1911 being taken as the base (= 1000). Rates of wages for females are not included. The index-numbers are "weighted" according to the number of persons engaged in different industrial groups in each State and the Commonwealth (see Report No. 2, pages 23 and 24).

VARIATIONS IN WAGE INDEX-NUMBERS IN DIFFERENT INDUSTRIES IN THE COMMONWEALTH, 1891 to 1912. (WAGES IN 1911 = 1000.)

Particulars	No. of Occupations included.	1891.	1896.	1901.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
I. Wood, Furniture, etc. ...	27	909	835	906	910	932	934	938	975	1,000	1,017
II. Engineering, Metal Work, etc. ...	101	875	873	888	900	913	930	935	946	1,000	1,038
III. Food, Drink, etc. ...	34	751	747	878	895	910	913	922	936	1,000	1,047
IV. Clothing, Hats, Boots, etc.	13	730	725	722	857	872	884	953	995	1,000	1,009
V. Books, Printing, etc. ...	26	907	850	866	872	879	888	931	959	1,000	1,034
VI. Other Manufacturing ...	102	892	861	895	894	893	903	911	935	1,000	1,023
VII. Building ...	67	813	764	866	883	911	919	932	959	1,000	1,037
VIII. Mining, Quarries, etc. ...	71	949	880	893	915	935	934	938	978	1,000	1,018
IX. Railway Services, etc. ...	68	892	894	918	920	923	927	956	965	1,000	1,046
X. Other Land Transport ...	9	348	772	874	874	893	919	919	977	1,000	1,091
XI. Shipping, etc. ...	74	856	773	862	894	904	904	983	984	1,000	1,082
XII. Agriculture, etc. ...	8	810	779	747	800	870	877	938	951	1,000	1,125
XIII. Domestic, Hotels, etc. ...	17	723	671	674	683	686	706	819	838	1,000	1,008
XIV. Miscellaneous ...	36	832	812	817	830	875	883	908	957	1,000	1,093
All Groups* ...	652	848	816	848	866	893	900	923	955	1,000	1,051

* Weighted average; see graph in § 8 hereof.

NOTE.—The figures in the above table are comparable horizontally, but are not directly comparable vertically. This is evident from the fact that the average wage in each industry group (and for all groups) in 1911 is made equal to 1000.

The above figures (for all groups combined) are shewn in the graph in paragraph 2 in § 8 of this section. It may be seen that the index-numbers increase during the whole period under review except in 1896, when there was a fall. The wage index-number increased from 848 in 1891 to 1000 in 1911, and 1051 in 1912. It will be observed that the increase from 1891 to 1911 was relatively greatest in Classes XIII. (Domestic, Hotels, etc.) IV. (Clothing, Hats, Boots, etc.), and III. (Food, Drink, Tobacco, etc.), and it is probably in the industries and occupations included in these groups that "sweating" was most prevalent. The relative increase is least in Class VIII. (Mining, Quarries, etc.), the index-number for that group having increased only from 949 in 1891 to 1000 in 1911 and 1018 in 1912.

Attention is drawn in Report No. 2 (see pages 25 and 26) that the index-numbers given in the above table are readily *reversible*, that is to say, any year other than the year 1911 can be taken as base, and an example is given, shewing the amount of wages payable in 1901, 1911 and 1912 in each industrial group for every £1 payable in 1891.

2. Variations in Wage Index-Numbers in Different States, 1891 to 1912.—The following table shews the progress in rates of wages for all industries in each State, wages in 1911 being taken as the base (= 1000). These results are based generally upon rates of wages prevailing in the capital town of each State, but in certain industries, such as mining, rates are necessarily taken for places other than the capital towns.

VARIATIONS IN WAGE INDEX-NUMBERS IN DIFFERENT STATES, 1891 to 1912.
(WAGES IN 1911 = 1000.)

Particulars.	No. of Occupations included.	1891.	1896.	1901.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
New South Wales	158	858	819	855	883	907	910	939	965	1,000	1,055
Victoria	150	801	768	808	819	870	884	900	938	1,000	1,054
Queensland	87	910	874	903	911	916	927	948	962	1,000	1,013
South Australia	134	801	803	809	821	847	857	893	939	1,000	1,035
Western Australia	69	837	908	913	914	914	921	927	969	1,000	1,034
Tasmania	54	939	854	899	937	906	906	915	966	1,000	1,168
Commonwealth*	652	848	818	848	866	893	900	923	955	1,000	1,051

* Weighted average; see graph in § 8.

NOTE.—The figures in the above table are comparable horizontally, but are not directly comparable in the vertical columns. This is evident when it is considered that wages in each State in 1911 are taken equal to 1000.

The above table shews that the relative increase from 1891 to 1911 was greatest in Victoria and South Australia, and least in Tasmania, but in the last-named State there was a remarkable increase, amounting to nearly 17 per cent., in 1912. This is, no doubt, accounted for to a large extent by the fact that the wages board system was first adopted in Tasmania in that year.

These index-numbers are, of course, also reversible, and an illustration is given in Report No. 2 (see page 27).

§ 5. Current Rates of Wages in Different Occupations and States.

1. General.—In Report No. 2 particulars were given, so far as available for each State, of the prevailing rates of wages in upwards of 400 different occupations. In this section the list of occupations has been curtailed and particulars are given for the more important industries and occupations only. Particulars of wages in the mining industry have already been given herein, (see p. 519).

2. **Comparative Table of Time Rates of Wages, 1913.**—The information upon which the particulars were primarily based was furnished by trade unions. These returns have been carefully checked and brought up to date by reference to awards of arbitration courts, determinations of wages boards and industrial agreements. It will be seen that for convenience of comparison *the wages are in nearly all cases presented as a weekly rate*, though in many industries they are actually based on daily or hourly rates, as specified in awards, determinations or agreements. This caution is necessary, in view of the fact that it is often in those industries and occupations in which employment is of an exceptionally casual or intermittent nature that wages are fixed or paid at a daily or hourly rate. Hence the average weekly earnings in such occupations will probably fall considerably short of the weekly rates specified in the table.

The rates specified refer generally to the capital town of each State, but in industries, such as mining and agriculture, rates are necessarily taken for places other than the capital towns. *The figures given relate to journeymen or adult workers, and represent (except where otherwise specified in the footnotes) the amounts payable for a full week's work of 48 hours.* In every case where the hours of labour constituting a full week's work are other than 48, the number of hours is indicated in the footnotes. Occupations of females are printed in italics.

WEEKLY RATES OF WAGES OF JOURNEYMEN OR ADULT WORKERS IN THE CAPITAL TOWN OF EACH STATE, 1913*, FOR A FULL WEEK'S WORK.

NOTE.—Occupations of Females are printed in Italics. Except where otherwise specified in the footnotes, the hours of labour constituting a full week's work are forty-eight.

I.—WOOD, FURNITURE, SAWMILL AND TIMBER WORKS.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Coopers	66 0	62 0	66 0	66 0	80 0	60 0
	to 74 0					
Furniture, including Mattress and Picture Frame.						
Bedding Makers	60 0	57 0	51 4	54 0	60 0	48 0
Cabinet Makers	64 0	60 0	60 6	56 0	69 0	57 0
Chair Makers	64 0	60 0	60 6	56 0	69 0	57 0
French Polishers	64 0	60 0	56 10	56 0	66 0	57 0
Upholsterers	64 0	60 0	56 10	56 0	66 0	57 0
Wood Machinists	54 0	51 0	47 8	56 0	60 0	54 0
	to 63 0	to 63 0	to 60 6		to 66 0	to 57 0
Mattress Makers.						
Finishers ... ..	...	55 0	53 2	48 0	...	48 0
Makers	60 0	58 0	53 2	52 0	66 0	48 0
Varnishers ... ..	...	55 0	47 8	43 0	...	48 0
Timber Yard Workers.						
Labourers	46 0	48 0	48 0	48 0	54 0	43 6
Moulding Machinists	56 0	56 0	64 0	57 6	60 0	50 0
					to 66 0	
Ordermen	52 6	54 0	52 0	54 0	57 6	48 0
Planing Machinists	54 0	57 0	56 0	49 6	66 0	60 0
Pullers or Tailors Out	46 0	48 0	48 0	45 0	57 0	46 6
			& 52 0	& 51 0		
Saw Doctors	72 0	72 0	70 0	69 0	72 0	66 0
Saw Sharpeners	60 0	60 0	60 0	60 0	60 0	48 0
Wood Turners	63 0	60 0	62 0	57 0	72 0	54 0

* The rates specified are in most cases the minimum rates payable in the capital towns to journeymen or adult workers under Awards of Commonwealth or State Arbitration Courts, or under Determinations of Wages Boards. Rates payable in the mining, shipping, agricultural, pastoral, etc., industries do not, of course, ordinarily refer to the capital towns.

(1) 44 hours per week.

WEEKLY RATES OF WAGES, ETC.—Continued.

II.—ENGINEERING, METAL WORKS, ETC.*

Occupations.	Sydney.		Melb.		Brisbane.		Adelaide.		Perth.		Hobart.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Electrical Trades.												
Fitters ...	66	0	63	0	66	0	66	0	72	0	63	0
Lamp Attendants ...	51	0	54	0	48	0	48	0	...		...
Mechanics ...	57	0	63	0	60	0	60	0	72	0	57	0
Wiremen ...	51	0	51	0	50	0	51	0	60	0	51	0
Engineers.												
Blacksmiths ...	72	0	66	0	166	0	69	0	78	0	60	0
Borers and Slotters ...	60	0	60	0	160	0	60	0	66	0	60	0
							& 66	0				
Brass Finishers ...	62	0	54	0	166	0	60	0	72	0	51	0
Coppersmiths ...	72	0	66	0	166	0	69	0	78	0	60	0
Drillers ...	50	0	48	0	158	0	51	0	60	0	60	0
							& 58	0				
Fitters ...	70	0	66	0	166	0	69	0	72	0	60	0
Millers ...	60	0	60	0	160	0	66	0	66	0	60	0
							& 69	0				
Pattern Makers ...	74	0	72	0	168	0	69	0	81	0	60	0
Planers ...	60	0	60	0	160	0	60	0	66	0	60	0
Shapers ...	60	0	54	0	160	0	60	0	66	0	60	0
			& 60	0								
Turners ...	70	0	66	0	166	0	69	0	72	0	60	0
Farriers.												
Floormen ...	60	0	50	0	45	0	54	0	60	0	40	0
Shoemsmiths...	66	0	57	6	45	0	60	0	66	0	45	0
Iron Moulders.												
Core Makers ...	66	0	56	0	166	0	66	0	69	0	60	0
			& 68	0					& 72	0		
Furnacemen ...	60	0	54	0	148	0	58	0	60	0	42	0
Labourers ...	48	0	48	0	142	0	51	0	54	0	42	0
Machine Moulders ...	62	0	56	0	160	0	60	0	66	0	60	0
Iron Workers' Assistants.												
Boilermakers' Helpers ...	48	0	50	0	144	0	48	0	45	0	48	0
									& 54	0		
Engineers' Labourers ...	48	0	46	6	140	0	48	0	45	0	42	0
									& 54	0		
Labourers ...	46	0	48	0	140	0	48	0	45	0	42	0
									to 54	0		
Smiths' Strikers ...	48	0	48	0	144	0	48	0	48	0	48	0
									& 54	0		
Sheet Metal Workers.												
Canister Makers ...	45	0	54	0	46	0	50	0	...		...
	& 50	0										
Machinists ...	45	0	53	0	46	0	50	0	57	6	...	
	& 50	0										
Solderers ...	48	0	53	0	48	0	50	0	57	6	48	0
Tinsmiths ...	60	0	57	0	54	0	52	0	65	0	54	0

* See footnote * on page 1130, also remarks re hours of labour at head of that page

(1) 44 hours per week.

WEEKLY RATES OF WAGES, ETC.—Continued.

III.—FOOD, DRINK, TOBACCO, ETC.*

Occupations.	Sydney.		Melb.		Brisbane.		Adelaide.		Perth.		Hobart.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Bakers.												
Carters ...	152	6	148	0	147	6	148	0	156	0	142	0
Daymen ...	60	0	60	0	60	0	60	0	63	0	47	6
Jobbers (per hour) ...	1	6	1	6	1	6	1	3	1	6	1	3
Single Hands ...	65	0	65	0	60	0	60	0	68	0	60	0
					& 65 0							
Brewers.												
Bottle Packers...	52	0	54	0	48	0	54	0	54	0	48	0
Bottlers and Washers ...	52	0	54	0	48	0	54	0	56	0	48	0
Cellarmen ...	54	0	54	0	48	0	54	0	60	0	48	0
Maltsters (Malt Hands) ...	54	0	54	0	42	0	57	0	60	0	48	0
Towermen ...	56	0	54	0	48	0	54	0	60	0	48	0
Butchers.												
General Hands ...	54	0	52	0	52	6	155	0	60	0	42	0
Salterns ...	56	0	52	0	55	0	155	0	60	0	42	0
Shopmen ...	55	0	60	0	52	6	160	0	60	0	51	0
	to 65 0				to 65 0							
Slaughtermen ...	80	0	70	0	65	0	60	0	70	0	52	6
					to 70 0							
Small Goodsman ...	56	0	60	0	76	0	160	0	60	0	51	0
Carters ...	54	0	45	0	45	0	46	0	50	0	142	0
					& 50 0				& 60 0			
Confectioners.												
Chocolate Dippers ...	22	0	22	0	...		20	0	...		...
Head storemen ...	55	0	50	0	48	0	50	0	60	0	...	
Labourers ...	45	0	42	0	44	9	48	0	50	0	...	
Storemen ...	45	0	42	0	44	9	45	0	50	0	...	
Sugar, glucose, gelatine, gum, liquorice, & chocolate hands	60	0	54	0	46	8	54	0	60	0	45	0
Ham and Bacon Curers.												
First hand ...	80	0	65	0	65	0	...		65	0	57	6
Scalders ...	57	6	57	6	56	0	...		54	0	52	6
Slaughtermen ...	75	0	65	0	65	0	...		70	0	55	0
Smokers ...	57	6	48	0	57	6	...		54	0	52	6
Jam and Preserve Workers.												
Males ...	51	0	48	0	48	0	45	0	...		42	0
Solderers ...	50	0	48	0	50	0	48	0	...		45	0
Females ...	20	0	23	0	20	0	21	0	...		20	0
			& 30 0								& 24 0	
Milk Carters.	54	0	54	0	54	0	54	0	56	0	54	0
Millers.												
Engine Drivers ...	52	6	48	0	...		60	0	55	0	47	6
											& 60 0	
Millers ...	60	0	55	0	...		60	0	68	0	52	6
Packermen ...	48	0	48	0	...		48	0	45	0	42	0
									to 54 0			
Storemen ...	48	0	48	0	...		48	0	51	0	50	0
Pastrycooks.												
First Hand ...	60	0	56	0	165	0	60	0	65	0	60	0
Second Hand ...	...		50	0	155	0	...		60	0	47	6

* See footnote * on page 1130, also remarks re hours of labour at head of that page.

(1) 54 hours per week. (2) 60 hours per week. (3) 58 hours (winter), 60 hours (summer) per week. (4) 58 hours per week. (5) 56 hours per week. (6) 52 hours per week. (7) 52½ hours (winter), 54½ hours (summer) per week. (8) 70 hours per week. (9) 56 hours (winter), 60 hours (summer) per week.

WEEKLY RATES OF WAGES, ETC.—Continued.

IV.—CLOTHING, HATS, BOOTS, ETC.*

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Bootmakers.						
Bootmakers	54 0	54 0	52 0	54 0	54 0	52 0
Bootmakers	25 6	25 6	21 0	20 0	32 0	22 6
		& 32 6				
Dressmakers	...	21 6	22 0	16 0	...	20 0
Hatters.						
Felt Hatters	70 0	65 0	...	†	...	...
Straw, Blockers	155 7	43 0	...	...	...	...
Finishers	125 0	18 0	...	...	...	...
Machinists	130 0	32 6	...	...	...	...
Stiffeners	155 7	43 0	...	...	...	...
Milliners	...	22 6	22 5	16 6	...	15 0
Shirt Makers	...	22 6	19 8	16 0	...	15 0
Tailors.						
Machinists	28 0	22 6	24 0	20 0	40 0	†
		to 25 6			& 45 0	
Pressers	60 0	55 0	50 0	55 0	60 0	...
Tailors	55 0	60 0	50 0	60 0	70 0	...
Tailoresses	26 0	22 6	22 6	20 0	35 0	...
	& 32 6	to 26 0	& 24 0		& 45 0	

V.—BOOKS, PRINTING, BINDING, ETC.

Bookbinders.						
Bookbinders	62 6	58 0	56 0	56 0	65 0	60 0
Feeders, Sewers	23 0	21 0	18 6	18 0	...	17 6
	& 25 0	& 23 0		& 22 0		
Paper Rulers	62 6	58 0	56 0	56 0	65 0	60 0
Printers—Daily Newspapers.						
Compositors—Day	63 0	273 6	373 4	76 0	67 6	...
	to 76 0					
Night	80 0	277 0	373 4	480 0	480 0	63 0
	to 88 0					
Linotype Operators—Day	†	†	384 0	72 0	280 0	†
Night	†	†	384 0	†	290 0	†
Machinists—1st Hand—Day	70 0	169 0	365 0	70 0	65 0	...
Night	80 0	377 0	365 0	70 0	365 0	65 0
Publishers	52 6	346 0	350 0	57 0	60 0	55 0
	& 55 0	& 58 8	& 55 0			
Readers—Day	70 0	271 9	365 0	76 0	70 0	60 0
Night	90 0	275 3	365 0	80 0	290 0	70 0
Stereotypers (1st Class), Day	60 0	169 0	375 0	58 0	65 0	60 0
Night	70 0	377 0	375 0	64 0	370 0	70 0
Printing—Jobbing Offices, etc.						
Compositors	65 0	60 0	56 0	60 0	65 0	60 0
Linotype Operators	467 6	270 0	362 6	472 0	280 0	†
Machinists	52 6	56 0	47 6	56 0	65 0	60 0
	& 60 0	& 60 0	& 56 0			
Monotype Operators	460 0	270 0	356 0	472 0	270 0	...
Readers	65 0	64 0	56 0	60 0	65 0	60 0
Stereotypers	60 0	60 0	56 0	60 0	65 0	60 0

* See footnote * on page 1130, also remarks re hours of labour at head of that page. † Piece Rates. (1) 46 hours per week. (2) 42 hours per week. (3) 44 hours per week. (4) 45 hours per week.

WEEKLY RATES OF WAGES, ETC.—Continued.

VI.—OTHER MANUFACTURES.*

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
Brickmakers.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Brick Burners ...	1 66 6	2 67 6	1 56 0	2 60 0	60 0	49 6
Brick Drawers ...	58 0	60 0	46 0	54 0	..	49 6
Brick Setters ...	58 0	56 0	44 0	56 0	64 0	54 0
Labourers ...	48 0	48 0	40 0	48 0	56 0	48 0
Machinemens ...	54 0	3 55 8	4 53 8	52 0	62 0	48 0
Coach Makers.						
Body Makers ...	66 0	60 0	5 50 11	60 0	63 0	60 0
Painters ...	66 0	60 0	5 50 11	60 0	63 0	60 0
Smiths ...	66 0	60 0	5 50 11	60 0	63 0	60 0
Trimmers ...	66 0	60 0	5 50 11	60 0	63 0	60 0
Wheelwrights ...	66 0	60 0	5 50 11	60 0	63 0	60 0
Gasworks Employees.						
Coke Trimmers ...	54 0	52 6	48 0	50 0	54 0	48 0
Engine Drivers ...	60 0	60 0	54 0	60 0	66 0	54 0
Gas Fitters ...	66 0	63 0	60 0	54 0	78 0	60 0
Labourers ...	48 0	48 0	45 0	48 0	54 0	42 0
Stokers ...	60 0	61 6	60 0	60 0	66 0	54 0
					& 73 6	
Glass, Plate, Sheet, and Ornamental.						
Bevellers ...	58 0	48 0	...	60 0	...	60 0
Cutters and Glaziers ...	56 0	50 0	...	48 0	...	...
Lead Light Glaziers ...	60 0	50 0	...	56 0	...	...
Silverers ...	58 0	48 0	...	60 0	...	...
Jewellers.						
Chain Makers ...	60 0	55 0	60 0	60 0	66 0	...
Engravers ...	65 0	60 0	60 0	60 0	66 0	60 0
Mounters ...	60 0	55 0	60 0	60 0	66 0	60 0
Setters ...	65 0	60 0	60 0	60 0	66 0	60 0
Watch and Clockmakers ...	65 0	6 70 0	60 0	60 0	66 0	60 0
Monumental Workers.						
Carvers ...	72 0	7 69 8	7 58 8	70 0	78 0	66 0
Fixers ...	66 0	7 64 2	7 58 8	60 0	72 0	66 0
Labourers ...	48 0	7 50 0	7 44 0	48 0	54 0	48 0
Letter Cutters ...	72 0	7 66 0	7 58 8	66 0	78 0	66 0
Masons ...	66 0	7 58 8	7 58 8	70 0	78 0	66 0
Saddlers.						
Females ...	24 0	24 0	24 0	30 0	25 0	...
Harness Makers ...	54 0	54 0	54 0	54 0	50 0	50 0
Machinists ...	54 0	54 0	54 0	54 0	50 0	50 0
Saddlers ...	54 0	54 0	54 0	54 0	50 0	50 0

* See footnote * on page 1130, also remarks re hours of labour at head of that page.

(1) 56 hours per week. (2) 60 hours per week. (3) 51 hours per week. (4) 52 hours per week. (5) 47 hours per week. (6) 46½ hours per week. (7) 44 hours per week.

WEEKLY RATES OF WAGES, ETC.—Continued.

IV.—OTHER MANUFACTURES—(Continued).*

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
Tanners.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Beamsmen ...	47 0	54 0	50 0	47 0	54 0	55 0
Curriers ...	50 0	57 0	52 6	50 0	57 0	60 0
Machinists, Fleshing ...	47 0	54 0	50 0	47 0	54 0	55 0
„ Scudding ...	44 0	49 0	48 0	42 0	50 0	49 0
„ Shaving ...	45 0	50 0	50 0	50 0	57 0	52 0
„ Splitting ...	50 0	57 0	52 6	50 0	57 0	55 0
„ Unhairing ...	44 0	49 0	48 0	42 0	50 0	52 0
„ Whitening ...	45 0	57 0	48 0	50 0	57 0	57 0
Rollers and Strikers ...	45 0	50 0	50 0	43 0	50 0	52 0
Wickerworkers ...	55 0	57 6	160 6	54 0	...	52 6

VII.—BUILDING.

(Note.—The hours of labour in Melbourne and Brisbane are 44 per week.)

Bricklayers ...	72 0	71 6	66 0	72 0	78 0	72 0
Carpenters ...	66 0	69 8	60 6	66 0	69 0	66 0
Labourers.						
Bricklayers' Labourers ...	54 0	55 0	52 0	60 0	60 0	48 0
	& 57 0	& 60 6				
Carpenters' „ ...	51 0	52 3	48 0	54 0	54 0	45 0
	& 54 0	& 55 0				
Concrete Workers ...	54 0	44 0	49 0	60 0	60 0	48 0
		& 55 0				
Earth Excavators ...	54 0	44 0	48 0	54 0	54 0	48 0
		& 55 0				
Gear Workers ...	60 0	55 0	56 0	66 0	66 0	48 0
		& 60 6				
Masons' Labourers ...	54 0	55 0	52 0	60 0	60 0	48 0
	& 57 0	& 60 6				
Plasterers' „ ...	54 0	55 0	52 0	60 0	60 0	48 0
	& 57 0	& 60 6				
Scaffold Hands ...	60 0	55 0	56 0	66 0	66 0	48 0
		& 60 6				
Lathers ...	72 0	71 6	60 6	72 0	78 0	68 0
Masons ...	173 4	64 2	60 6	72 0	78 0	66 0
		& 71 6				
Painters.						
Glaziers ...	64 0	60 6	55 0	60 0	66 0	54 0
Painters ...	64 0	60 6	55 0	60 0	66 0	54 0
Paperhangers ...	64 0	60 6	55 0	60 0	66 0	54 0
Signwriters ...	66 0	60 6	55 0	60 0	72 0	60 0
Plasterers ...	66 0	64 2	60 6	72 0	78 0	68 0
		& 74 8				
Plumbers.						
Galvanised Iron Workers ...	66 0	66 0	66 0	66 0	78 0	57 0
Gasfitters ...	66 0	66 0	66 0	66 0	78 0	57 0
Plumbers ...	66 0	66 0	66 0	66 0	78 0	57 0
Slaters ...	72 0	71 6	60 6	72 0	78 0	66 0
Tilers ...	72 0	71 6	60 6	72 0	78 0	66 0
Tuckpointers ...	72 0	64 2	60 6	72 0	78 0	...

* See footnote * on page 1130, also remarks re hours of labour at head of that page.
(1) 44 hours per week.

WEEKLY RATES OF WAGES, ETC.—Continued.

VIII.—RAILWAY AND TRAMWAY SERVICES.*

Occupations.	Sydney.		Melb.		Brisbane.		Adelaide.		Perth.		Hobart.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Railway Employees.†												
Engine Drivers (Loco.) ...	60	6	69	0	57	0	72	0	72	0	60	0
	to 90	0	to 87	0	to 87	0	to 90	0	to 90	0	to 72	0
Firemen ...	54	0	48	0	45	0	54	0	54	0	45	0
	to 60	0	to 57	0	to 60	0	to 66	0	to 66	0	to 54	0
Guards ...	51	0	48	0	49	6	51	0	60	0	48	0
	to 66	0	to 72	0	to 84	0	to 69	0	to 75	0	to 72	0
Porters ...	48	0	42	0	45	0	48	0	54	0	39	0
	to 54	0	to 51	0	to 51	0	to 51	0	to 60	0	to 48	0
Shunters ...	51	0	48	0	48	0	51	0	57	0	48	0
	to 72	0	to 66	0	to 72	0	to 57	0	to 75	0	to 57	0
Signalmen ...	54	0	51	0	48	0	51	0	54	0	45	0
	to 78	0	to 75	0	to 67	6	to 66	0	to 81	0	to 57	0
Tramway (Electric) Employees†												
Car Washers or Cleaners ...	51	0	48	0	51	0	51	0	48	0	48	0
			& 51	0					to 57	0||		
Conductors ...	54	0	57	0	57	0	57	0	48	0	51	0
									to 60	0		
Firemen (four fires) ...			60	0	60	0	60	0				
„ (less than four fires) ...			54	0	57	0	57	0				
Horse Drivers ...			48	0	51	0	48	0	55	0	48	0
			& 51	0								
Labourers ...	45	0	48	0	48	0	48	0	48	0	48	0
	& 48	0	& 51	0					& 54	0		
Lampmen, Trimmers ...	45	0	51	0	51	0	51	0				
Maintenance men, Fettlers ...	48	0	48	0	54	0	54	0	48	0	48	0
			& 51	0					to 58	0||		
Motormen ...	60	0	57	0	57	0	57	0	48	0	57	0
									to 60	0		
Night Watchmen ...			48	0	48	0	48	0	48	0	50	0
Overhead Wiremen (Leading) ...			68	0	68	0	60	0				
„ „ (Other) ...			54	0	54	0	54	0			48	0
			& 57	0	& 60	0						
Pitmen ...	60	0	60	0	57	0	57	0	48	0		
									to 63	0||		
Signalmen ...	60	0	60	0	60	0	60	0				
	to 66	0										
Track Cleaners ...	45	0	48	0	51	0	51	0	48	0	48	0
			& 51	0					to 58	0||		
Tower Wagon Drivers ...	50	0	48	0			48	0				
	& 60	0	& 51	0			& 54	0				
Trimmers or Fuel Men ...	48	0			51	0	51	0	48	0		

IX.—OTHER LAND TRANSPORT.

Carriers.														
One Horse	...	...	150	0	245	0	347	6	448	0	50	0	442	0
Two Horses	...	...	155	0	250	0	352	0	450	0	55	0	447	0

* See footnote * on page 1130, also remarks re hours of labour at head of that page.

† The hours of labour for Railway Employees are 48 per week (in N.S.W. 96 per fortnight), except in the following cases:—N.S.W.—Porters, 108 to 120 hours per fortnight; Victoria—Porters, 48 to 60 hours per week; South Australia—Porters and Signalmen, 48 to 57 hours per week; and Tasmania—Guards and Shunters, 54, and Porters 48 to 54 hours per week. Owing to the difference in the classification of grades of Railway Employees in the various States, only minimum and maximum rates are quoted, excluding those for Foremen. ‡ For New South Wales the Wages are determined by a State Award. For Victoria, Western Australia and Tasmania, agreements have been made under Commonwealth Arbitration Act. For Queensland and South Australia, Awards have been made by the Commonwealth Court of Conciliation and Arbitration. By Commonwealth agreements the wages for Gripmen and Conductors in Melbourne have been fixed as follows:—Conductors, 55s. and 57s. per week; Gripmen, 55s. and 57s. per week. || The maximum rate applies to night work.

(1) 56½ hours per week. (2) 58 hours per week. (3) 58 hours (winter) 60 hours (summer) per week. (4) 54 hours per week.

WEEKLY RATES OF WAGES, ETC.—Continued.

X.—SHIPPING, WHARF LABOUR, ETC.*

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Marine Engineers.†	LOWEST CLASS.		HIGHEST CLASS.			
	Under 100 N.H.P.		600 or more N.H.P.			
	s.		s.			
Chief ... per month	440		680			
Second ... "	350		440			
Third ... "	310		360			
Fourth ... "	...		300			
5th, 6th, 7th, 8th ... "	...		240			
	INTERSTATE		INTERSTATE			
	PASSENGER	VESSELS.	CARGO	VESSELS.		
	Lowest	Highest	Lowest	Highest		
	Class, 250	Class, over	Class, 250	Class, over		
	tons & under.	4000 tons.	tons & under.	4000 tons.		
Merchant Service.‡	420s.		860s.		400s.	
Masters ...	420s.		860s.		400s.	
Officers, Chief ...	300s.		400s.		280s.	
" Second ...	240s.		340s.		240s.	
" Third ...	...		280s.		...	
" Fourth and Fifth ...	...		200s.		...	
Seamen.						
A.B.'s ... per month	...		160s.		...	
Boatswains ... "	...		180s.		...	
Donkeymen ... "	...		220s.		...	
Firemen ... "	...		200s.		...	
Greasers ... "	...		200s.		...	
Trimmers ... "	...		160s.		...	
Waterside Workers.						
Coal Lumpers ... per hour	1 7½	1 5	1 7½	1 6	1 7	1 5
Wharf Labourers ... "	1 6	1 5	1 5	1 5	1 6	1 5

XI.—AGRICULTURAL, PASTORAL, ETC.

Agricultural Workers, Etc.

Minimum rates in the agricultural industries have not generally been fixed by industrial tribunals. The following particulars relate to weekly predominant or most frequent rates for adult workers:—

General farm hands, 20s. to 25s. —Ploughmen, 20s. to 30s. \$, Harvesters, 30s. to 40s.; Milkmen, 20s. \$; Threshers, 30s. to 40s.

Fruit Harvesters ... 1s. per hour
Chaffcutters ... 1s. to 1s. 1½d. per hour.

Gardeners.

Gardeners ...	48 0	48 0	48 0	51 0	54 0	48 0
" Labourers ...	45 0	45 0	42 0	48 0	48 0	42 0
General Nursery Hands ...	48 0	48 0	48 0	51 0	60 0	48 0
Nursery Labourers ...	45 0	42 0	42 0	48 0	48 0	42 0

Pastoral Workers.¶

Shearers ... per 100	24 0	24 0	24 0	24 0	25 0	24 0
Shed Hands ...	37 6s	37 6s	37 6s	37 6s	46 0s	37 6s
Cooks, per man per week ...	4 0	4 0	4 0	4 0	6 0	50 0¶

* See footnote * on page 1130, also remarks at head of that page.

† Minimum rates under the Commonwealth Award are classified according to nominal horsepower of vessel; the lowest and highest classes are here specified. ‡ Minimum rates under the Commonwealth Award are classified for Interstate vessels, and for vessels within a State according to tonnage; the lowest and highest classes for Interstate passenger and cargo vessels are here given. ¶ The rates specified for New South Wales, Victoria, Queensland, and South Australia are the minimum rates under the Award of the Commonwealth Court of Conciliation and Arbitration; for Western Australia and Tasmania the rates are those arranged under industrial agreements. § And found. ¶ Per week.

WEEKLY RATES OF WAGES, ETC.—Continued.

XII.—DOMESTIC, HOTELS, ETC.†

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
Hotel, Restaurant Workers.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
<i>Barmaids</i> ...	120 0*	237 6	340 0		465 0	20 0†
<i>Barmen</i> ...	130 0*	150 0	45 0		465 0	25 0
			& 50 0			to 40 0
<i>Billiard Markers</i> ...	125 0*	142 6	540 0		40 0	15 0
						to 20 0†
<i>Handy Men</i> ...	20 0*	135 0	537 6		25 0†	10 0
						to 15 0
<i>Housemaids</i> ...	13 0*	230 0	515 0†		22 6†	11 0
						to 15 0†
<i>Laundresses</i> ...	20 0*	235 0	520 0†		25 0†	15 0†
<i>Porters</i> ...	25 0	137 6	540 0		30 0†	15 0
	to 32 6*	to 42 6				to 20 0†

XIII.—MISCELLANEOUS AND GENERAL LABOUR.

Engine Drivers.						
<i>Stationary</i> ...	48 0	48 0	54 0	54 0	54 0	45 0
	to 66 0	to 66 0	to 66 0	to 66 0	to 72 0	to 60 0
<i>Firemen—First Class</i> ...	54 0	54 0	51 0	54 0	57 6	48 0
<i>Second Class</i> ...	51 0	48 0	48 0	48 0	48 0	45 0
Municipal Employees.						
<i>Labourers</i> ...	54 0	51 0	48 0	48 0	54 0	42 0
<i>Street Sweepers (Scavengers)</i> ...	51 6	51 0	45 0	48 0	54 0	39 0
	& 54 0					
Shop Assistants.						
<i>Boots—Males</i> ...	52 6	50 0	55 0	57 6	45 0	37 6
					to 55 0	
<i>Females</i> ...	30 0	27 6	30 0	27 6	20 0	15 0
					to 30 0	
<i>Drapers—Males</i> ...	52 6	58 0	55 0	57 6	45 0	40 0
					to 55 0	
<i>Females</i> ...	30 0	30 0	30 0	27 6	20 0	15 0
					to 30 0	to 20 0
<i>Furniture</i> ...		60 0	55 0	55 0	45 0	...
				to 57 6	to 55 0	
<i>Grocers</i> ...	52 6	50 0	50 0	55 0	45 0	35 0
					to 55 0	
<i>Hardware</i> ...		60 0	55 0	55 0	45 0	40 0
				to 57 6	to 55 0	
<i>Men's Clothing</i> ...	52 6	60 0	55 0	57 6	45 0	...
					to 55 0	
Storemen, Packers, etc. (Shops).						
<i>Night Watchmen</i> ...	150 0	154 0	140 0	156 0	150 0	140 0
<i>Packers</i> ...	51 0	35 0	47 6	48 0	50 0	...
		to 50 0				
<i>Storemen</i> ...	48 0	40 0	47 6	48 0	50 0	50 0
		to 50 0				

† See footnote * on page 1130, also remarks re hours of labour at head of that page.

* When board not provided the rates are 10s. per week higher. † With board and lodging.

‡ The determination fixing the rates for hotel and restaurant workers has been quashed.

(1) 58 hours per week. (2) 56 hours per week. (3) 55 hours per week. (4) 54 hours per week. (5) 60 hours per week. (6) 63 hours per week. (7) 50 hours per week. (8) 52 hours per week. (9) 53 hours per week. (10) 51 hours per week. (11) 72 hours per week.

3. Relative Wages and Wage Index-Numbers in Different Industries and States.

1913.—From the rates given in the preceding statement, the following weighted average rates have been computed for each State and the Commonwealth. Taking the average for the whole Commonwealth as the base (=1000), index-numbers for each State are also shewn.

The figures given in the following table are exclusive of any rates in Groups XI. (Shipping, etc.) and XII. (Agricultural, Pastoral, etc.), sufficient data for the satisfactory computation of an average in these two groups not being available.

WEIGHTED AVERAGE NOMINAL WEEKLY RATES OF WAGES PAYABLE TO JOURNEYMEN OR MALE ADULT WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH STATE AND COMMONWEALTH, 1913.

Particulars,	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
Number of Occupations included ...	312	324	251	263	216	203	1,569
Weighted Average Weekly Rates of Wages ...	<i>s. d.</i> 55 3	<i>s. d.</i> 54 4	<i>s. d.</i> 54 6	<i>s. d.</i> 55 3	<i>s. d.</i> 64 1	<i>s. d.</i> 48 6	<i>s. d.</i> 55 4*
Index-Numbers ...	998	982	984	998	1,158	876	1,000*

* Weighted average.

The results given in the above table must be taken subject to the qualifications (a) that they are based only on a limited number of rates of wages, and (b) that the list of occupations to which the wages refer are not by any means uniform in the several States. Any results, in order to be representative for each State, must necessarily be subject to the latter qualification, inasmuch as the industrial occupations of the people are not by any means identical in the several States. A completely satisfactory record of relative rates of wages in the several States can be obtained only by means of an industrial census. The above results are, however, based on wages in a considerable number of important industries, and serve to indicate on general lines with a considerable degree of precision the relative conditions in the several States.

The results shew that (nominal) rates of wages are highest in Western Australia, followed in the order named by New South Wales and South Australia (equal), Queensland and Victoria (practically equal), and Tasmania.

The following table gives similar particulars in regard to the several industrial groups and to the weighted average for all groups combined. In computing the index-numbers the weighted average is taken as base (= 1000). The results are subject to similar qualifications as those expressed above and in paragraph 2 hereof.

The figures below shew that the highest average wage is that paid in Group V., Printing, etc. (65s. 6d. per week, or 18.3 per cent. above the weighted average for all groups). The rates of wages range from 65s. 6d. per week down to 42s. 9d. per week, the lowest being in Group XIII., Hotels, etc., which is nearly 22 per cent. below the average for all groups.

WEIGHTED AVERAGE WEEKLY RATES OF WAGES PAYABLE TO JOURNEYMEN OR ADULT MALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH INDUSTRIAL GROUP, 1913.

Industrial Groups.	No. of Rates Included.	Weighted Average Weekly Wage (for Full Week's Work).	Index-Numbers.
		s. d.	
I. Wood, Furniture, etc. ...	124	58 0	1,048
II. Engineering, Metal Works, etc. ...	235	56 6	1,021
III. Food, Drink, etc. ...	206	54 1	977
IV. Clothing, Boots, etc. ...	40	51 6	931
V. Books, Printing, etc. ...	121	65 6	1,183
VI. Other Manufacturing ...	341	55 3	998
VII. Building ...	139	62 10	1,135
VIII. Mining, Quarries, etc. ...	125	60 10	1,099
IX. Railways Services, etc. ...	115	55 11	1,010
X. Other Land Transport ...	12	47 3	854
XI. Shipping, etc.* ...	...	...	...
XII. Agricultural, etc.* ...	...	...	...
XIII. Hotels, etc. ...	29	42 9	772
XIV. Miscellaneous ...	82	52 10	954
All Groups† ...	1,569	55 4	1,000

* Insufficient data available for the satisfactory computation of an average. † Weighted average, exclusive of Groups XI. and XII.

§ 6.—Retail Prices, House Rents, and Cost of Living.

1. **Introduction.**—In Report No. 1, issued in December, 1912, the results of certain investigations into the subjects of Prices, Price-Indexes and Cost of Living in past years were published, and some account was given of the methods employed for the collection of the data and of the technique adopted in the computation of the results. An important discussion of the theory upon which the calculation of the index-numbers is based was given, but being necessarily too technical for the ordinary reader, was relegated to Appendixes. In Report No. 2 results of further investigations were given, and in that Report and in Labour Bulletin No. 1 (published in May last) information was given as to variations in retail and wholesale prices, house-rent, and cost of living up to the end of March, 1913.

It must here suffice to state that the method adopted for the computation of the index-numbers is what may very properly be called the "aggregate expenditure" method. The first process is, of course, to work out the average price of each commodity included, and numbers (called "mass-units") representing the *relative* extent to which each commodity was on the average used or consumed are then computed. The price in any year of each commodity multiplied by its corresponding "mass-unit" represents, therefore, the relative total expenditure on that commodity in that year *on the basis of the adopted regimen*. It follows, therefore, that by taking for any year the sum of the price of each commodity multiplied by its corresponding "mass-unit" a figure is obtained which represents the relative aggregate or total expenditure of the community in that year on all the commodities, etc., included. By computing these aggregate expenditures for a series of years and taking the expenditure in any desired year as "base," that is, making the expenditure in that year equal to 1000 units, the relative expenditure in any other year, that is to say, the "index-numbers," are readily ascertained. A numerical example of the technique and methods adopted for the computation of index-numbers was given in Report No. 2 (pp. 44 and 45).

2. **Scope of Investigation.**—It was pointed out in Report No. 1 that, in any investigation into the question of change in cost of living of a community, a careful distinction must be drawn between two things, viz:—

- (a) Variations in the *purchasing power* of money, and
- (b) Variations in the *standard of living*.

In Report No. 2, attention was drawn to the fact that the second element (b) can be limited, at any rate to some extent, by the exercise of self denial and thrift, and that such limitation is at the disposal of each individual; the former (a) is not subject to this possibility. Thus, from this aspect, social economics are concerned *primarily* with an accurate estimation of variations in the purchasing power of money and only secondarily with the question of the general standard of living which has been reached. The first desideratum demands that we shall select a suitable list of commodities, the quantities of each being taken in due proportion to their relative average consumption, and, keeping this list with the quantities constant, ascertain what it costs to purchase the whole group. In this way we can compare the cost in different areas or districts at the same time, as well as the variation in any one place from time to time. This is the "aggregate expenditure" method explained above.

As explained in Report No. 1, special steps were taken to conduct the investigation back as far as 1901 for the capital towns only. The collection of current monthly returns as to prices and of quarterly returns of house rents commenced in thirty of the more important towns of the Commonwealth in January, 1912.

3. **Commodities and Requirements Included.**—The 47 items of expenditure included have been divided into four groups, viz.—(a) groceries and bread, (b) dairy produce, (c) meat, and (d) house rent. The omission of clothing, fuel and light, travelling, amusements, etc., may on a superficial examination appear to limit the value of the results. Against this, reasons for which these items have been omitted were given in Report No. 1*, and it was explained that index-numbers based on these four groups satisfactorily reflect the general rise and fall in cost of living. It should, moreover, be pointed out that whereas the expenditure on the four groups included amounts to no less than 45 per cent. on the total expenditure, cost of clothing amounts to only 12 per cent., and of fuel and light to as little as 3 per cent. It follows, therefore, that before the index-numbers, based on the four groups, can cease to truly reflect variations in general purchasing value, changes in the price of clothing must have departed very widely, one way or the other, from the general change which has occurred. This applies still more forcibly, of course, to changes in price of fuel and light. Since prices of nearly all commodities generally move in the same direction, it is obvious that the validity of the index-numbers, based on the four groups referred to, can be vitiated only under a quite abnormal state of affairs, and even then only to a slight extent.

In Report No. 2 (pages 46-7) a tabular statement was given furnishing particulars of the commodities and items included, the units of measurement for which prices are collected, and the mass-units shewing the relative extent to which each item is used or consumed.

4. **Variations in the Cost of Living in each Metropolitan Town, 1901 to 1912.**—In Reports Nos. 1 and 2 and Labour Bulletin No. 1 index-numbers were given for each of the four groups, and for all groups combined, for each capital town since 1901, the expenditure in 1911 being taken in each case as base (=1000). In this section only summarised results are given. Firstly, for food and groceries; secondly, for house rent; and thirdly, for all groups combined. The index-numbers are shewn on the graphs on pages 1142 and 1143.

* See "Prices, Price-Indexes and Cost of Living in Australia," Labour and Industrial Branch Report No. 1, by G. H. Knibbs, C.M.G., F.S.S., etc., December, 1912, pp. 15 to 20.

(i.) *Food and Groceries.* The index-numbers thus computed for the three groups comprising groceries and food are shown in the following table:—

RETAIL PRICES IN METROPOLITAN TOWNS, INDEX-NUMBERS FOR GROCERIES AND FOOD (GROUPS I., II., AND III.), 1901 to 1912.

TOWN.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Sydney ...	927	1,078	1,040	886	982	974	946	1,041	1,023	1,011	1,000	1,136
Melbourne ...	1,032	1,085	1,041	980	1,018	1,010	989	1,064	1,015	1,026	1,000	1,156
Brisbane ...	948	998	970	877	928	943	930	1,006	966	983	1,000	1,082
Adelaide ...	1,008	1,007	963	922	974	963	933	990	1,006	981	1,000	1,132
Perth ...	880	946	953	899	935	919	890	911	901	930	1,000	999
Hobart ...	955	932	996	927	973	990	955	997	1,033	1,015	1,000	1,126
Weighted Average* ...	972	1,056	1,019	924	986	980	955	1,031	1,006	1,005	1,000	1,129

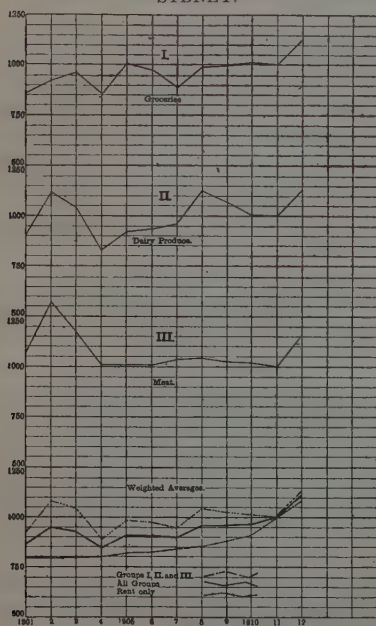
* For all capital towns.

NOTE.—The above figures are comparable horizontally, but are not directly comparable in the vertical columns. The index-numbers are reversible.

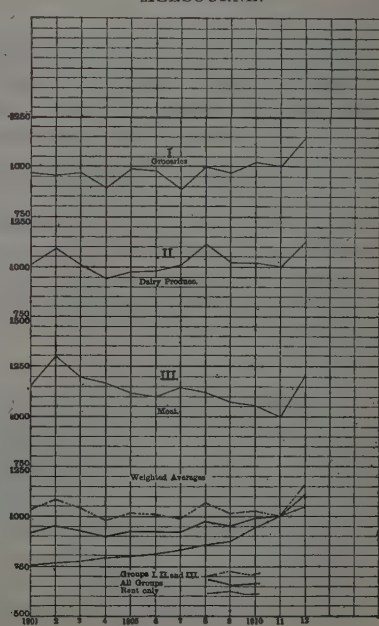
The price indexes for groceries and food are shewn by the broken lines on the graphs on this and the following page in relation to the price-indexes for house rent alone, and to the weighted averages for all groups. It may be seen that there is considerable similarity between the graphs for Sydney, Melbourne, and Brisbane, the price-level being high in 1902, 1908, and 1912, and low in 1904. The fluctuations are more marked in Sydney than in either of the other two towns. In all the capital towns prices for groceries and food reached their maximum in 1912, and, reviewing the whole of the period, it may be seen that, broadly speaking, prices have tended to move upward.

RETAIL PRICES, HOUSE RENT, AND COST OF LIVING IN METROPOLITAN TOWNS, GRAPHS 1901 TO 1912.

SYDNEY.



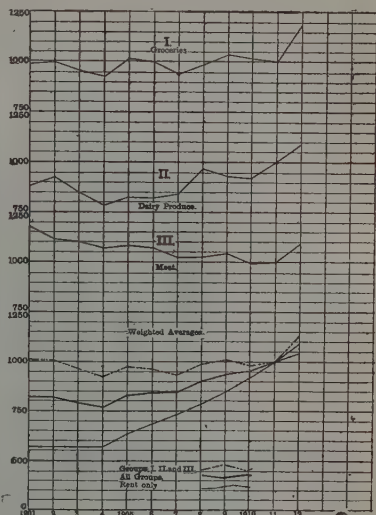
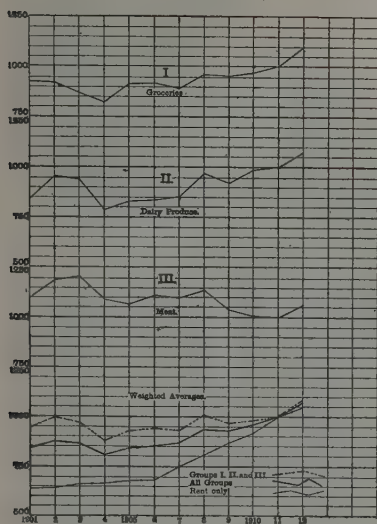
MELBOURNE.



RETAIL PRICES, HOUSE RENT, AND COST OF LIVING IN METROPOLITAN TOWNS.
GRAPHS 1901 TO 1912.

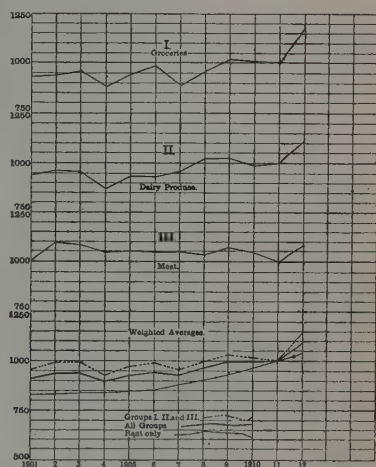
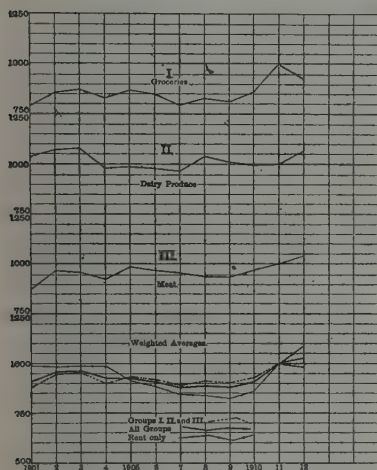
BRISBANE.

ADELAIDE.



PERTH AND FREMANTLE.

HOBART.



The increase for the three groups combined was greatest in Melbourne, followed in the order named, by Sydney, Adelaide, Hobart and Brisbane. It is obvious, of course, that the conditions governing prices in Perth, where there was a small fall in price level, are in many respects very different to those in the Eastern States.

(ii.) *House Rent*.—In the following table index-numbers are given computed for the weighted average house rent in each of the capital towns from 1901 to 1912, taking the average rent in 1911 as the base (= 1000). The average rent has been obtained for each town separately by multiplying the average predominant rent for each class of house (*i.e.*, houses having less than 4 rooms, 4 rooms, 5 rooms, 6 rooms, 7 rooms, and over 7

rooms) by a number ("weight") representing the relative number of houses of that class in the particular town. The sum of the products thus obtained, divided by the sum of the weights, gives the weighted average for all houses. The number of houses in each class for each town was obtained from the results of the 1911 census. It should be observed, therefore, that these index-numbers are based on the weighted average rents for all houses, and that they do not refer to any particular class of houses. The actual predominant rents for each class were given in appendixes to Reports Nos. 1 and 2, and an examination of these figures shews that for some classes of houses the increase has been greater, and in some less, than the general increase indicated in the following table.

**HOUSE RENTS IN METROPOLITAN TOWNS, INDEX-NUMBERS SHEWING
WEIGHTED AVERAGE RENTS (GROUP IV.), 1901 to 1912.**

TOWN.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Sydney ...	792	792	794	797	818	822	840	851	880	910	1,000	1,085
Melbourne ...	756	787	771	788	795	806	829	854	868	945	1,000	1,047
Brisbane ...	637	641	660	662	676	689	750	803	862	912	1,000	1,048
Adelaide ...	566	566	566	566	631	684	730	784	845	916	1,000	1,043
Perth ...	988	982	989	985	912	883	844	837	823	859	1,000	1,086
Hobart ...	829	831	836	838	846	852	880	904	931	964	1,000	1,030
Weighted Average* ...	755	759	763	770	784	794	818	841	868	921	1,000	1,063

* For all capital towns.

NOTE.—The figures in the above table are comparable horizontally, but are not directly comparable in the vertical columns. The index-numbers are reversible.

The above figures are shewn on the graphs on pages 1142 and 1143, in relation to the combined price-indexes for the other groups, and for all groups together. It may be seen that, except in Adelaide, where rents remained constant from 1901 to 1904, and in Perth, where they decreased from 1903 to 1909, there has been a uniform increase in each metropolitan town during the whole of the period under review. The increase has been greater in Adelaide (where the average rent in 1901 was only 566, compared with 1000 in 1911, and 1051 in 1912), and in Brisbane than in the other towns. It should be observed, however, that at the commencement of the period rents were exceptionally low in Adelaide, and were comparatively low in Brisbane (see Appendix IV. to Report No.1). The graph for Perth presents features entirely different from those for the other towns; the fall in rents commencing in 1903 and lasting until 1907 is followed, after another temporary decline in 1909, by a rapid rise.

(iii.) *Cost of Living*.—The weighted averages for all four groups are of importance, as indicating the general results of this investigation so far as cost of living is concerned. The following table shews the index-numbers for groceries, food, and house-rent for each metropolitan town, computed to the year 1911 as base (= 1000) :—

**COST OF LIVING IN METROPOLITAN TOWNS, INDEX-NUMBERS SHEWING
WEIGHTED AVERAGE RESULTS FOR ALL GROUPS (GROCERIES, DAIRY
PRODUCE, MEAT, AND HOUSE RENT), 1901 TO 1912.**

TOWN.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Sydney ...	866	950	929	846	909	906	898	956	959	965	1,000	1,113
Melbourne ...	916	951	927	899	924	924	922	976	953	992	1,000	1,111
Brisbane ...	841	875	863	803	841	853	868	936	930	959	1,000	1,071
Adelaide ...	817	816	791	768	826	843	845	901	936	953	1,000	1,094
Perth ...	912	957	964	925	928	909	876	889	878	909	1,000	1,025
Hobart ...	911	937	941	897	929	942	929	965	998	997	1,000	1,092
Weighted Average* ...	880	929	910	858	901	902	897	951	948	970	1,000	1,101

* For all capital towns.

NOTE.—The figures shewn in the above table are comparable horizontally, but are not directly comparable in the vertical columns. The index-numbers are reversible.

These figures are shewn separately for each town by the heavy line in the graphs on pages 1142 and 1143, in comparison with graphs shewing index-numbers for groceries and

food, and for house-rents. In all the towns the graphs disclose a distinct upward movement during the period under review, the rise in 1912 being particularly marked.

Generally speaking, prices were low in 1904, high in 1902 and 1908, and still higher in 1912. The general trend of the graph for Perth is different to that for the other towns, owing mainly to the decline in house-rents in that place, which occurred from 1908 to 1907, and again in 1909.

The general result for all the six towns shews that cost of living was slightly over 10 per cent. higher in 1912 than in 1911. The amount of the increase was almost identical in Sydney and Melbourne, and in Adelaide and Hobart. It was somewhat lower in Brisbane than in either of the four towns just referred to, and was least in Perth.

5. Relative Cost of Living in Different Towns, 1912.—The index-numbers given in the preceding paragraphs shew *changes in the cost of living separately for each individual town during the years 1901 to 1912*. The figures given in the table below shew *the relative cost of living in 1912 in the thirty towns*, for which particulars are now being collected. The cost of living in each town is compared with the weighted average for all towns. That is to say, the average expenditure in each town has been weighted by a number representing the population of the town, and a weighted average expenditure for all towns has been computed. Taking this average expenditure as the base (= 1000), the relative expenditure in each town is shewn. Owing to the concentration of population in the capital towns, the prices and rents in these towns have a preponderating influence on the weighted average index-numbers for all towns combined.

COST OF LIVING 1912.—INDEX-NUMBERS SHEWING RELATIVE COST IN EACH OF THIRTY TOWNS (INCLUDING 4, 5, AND 6-ROOMED HOUSES AND ALL HOUSES), COMPARED WITH WEIGHTED AVERAGE COST FOR ALL TOWNS.

Town.	Groceries and Food.	HOUSE RENT.				GROCERIES, FOOD, AND RENT, INCLUDING HOUSES HAVING—			
		4-r'm'd Houses only.	5-r'm'd Houses only.	6-r'm'd Houses only.	All Houses. Weightd Average.	4 Rooms.	5 Rooms.	6 Rooms.	All Houses. Weightd Average.
N.S. WALES—									
Sydney ...	986	1,273	1,213	1,191	1,237	1,078	1,070	1,071	1,082
Newcastle ...	995	645	752	797	688	883	905	900	877
Broken Hill ...	1,186	831	838	814	679	1,073	1,058	1,031	991
Goulburn ...	990	616	843	861	904	871	936	936	957
Bathurst ...	950	635	639	669	672	849	835	833	843
VICTORIA—									
Melbourne ...	949	977	978	996	1,000	958	960	968	969
Ballarat ...	973	477	538	579	624	815	813	809	839
Bendigo...	976	588	619	647	649	852	844	839	851
Geelong...	952	719	775	836	854	878	887	904	915
Warrnambool ...	928	715	734	727	747	860	856	844	858
QUEENSLAND—									
Brisbane ...	966	678	696	753	792	874	867	877	899
Toowoomba ...	965	618	701	672	788	854	868	842	897
Rockhampton ...	1,002	625	611	656	694	882	858	858	884
Charlton Towers ...	1,134	602	674	646	592	964	965	931	926
Warwick ...	1,003	727	723	718	790	915	900	884	921
S. AUSTRALIA—									
Adelaide ...	1,012	1,173	1,245	1,210	1,143	1,064	1,098	1,095	1,062
Moonta, etc. ...	1,014	523	570	618	567	858	851	849	843
Port Pirie ...	1,048	845	793	738	720	983	954	919	922
Mt. Gambier ...	904	606	625	639	640	809	802	793	803
Petersburg ...	1,018	837	840	823	791	960	953	936	931
W. AUSTRALIA—									
Perth ...	1,180	968	971	952	867	1,112	1,103	1,085	1,060
Kalgoorlie, etc. ...	1,471	1,136	1,128	1,103	830	1,364	1,345	1,318	1,225
Mid. Junct., etc. ...	1,209	760	863	875	745	1,066	1,082	1,070	1,031
Bunbury ...	1,231	869	830	842	664	1,115	1,083	1,069	1,013
Geraldton ...	1,237	1,356	1,361	1,235	1,017	1,275	1,283	1,236	1,152
TASMANIA—									
Hobart ...	1,044	821	807	789	816	973	957	938	957
Launceston ...	985	766	801	803	806	915	917	909	916
Zeehan ...	1,142	572	684	685	443	960	973	951	874
Beaconsfield ...	1,054	352	321	310	286	830	784	743	759
Queenstown ...	1,130	711	700	748	548	936	972	971	907
Weighted Average	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

Some few words as to the proper interpretation of the above table may not be out of place. The weighted average for all towns represents the price paid, on the average, by

the people of all the towns regarded as a single community. In other words, if the people of the thirty towns are paying on the average £1000 for groceries and food, the people in Sydney are paying £986, those in Newcastle £995, and so on. (See column I.) Or again, if the people of the thirty towns are paying on the average £1000 for the four series of items, then those of Melbourne are paying £969, of Ballarat £839, and so on. (See final column.) Thus, in this table, the figures are *comparable vertically, but are not directly comparable horizontally*, and this is to be carefully borne in mind in making comparison. That they are not directly comparable horizontally is immediately evident when it is remembered that each series, or group, for all towns is represented by the one figure—1000—though actually they do not represent equal amounts.

Comparing the first column with the fifth and last columns, it may be seen that the relative costs in the different towns in regard to the two main divisions, and the weighted average for all groups combined, differ considerably. Thus, in Sydney the index-number for rent (all houses), is 1237, or 23.7 per cent., above the weighted average for all towns, whereas the index-number for groceries and food is 986, or 1.4 per cent. below the average. In Brisbane, on the other hand, the index-number for groceries and food is greater than that for house-rent, both numbers being below the weighted average. In some of the smaller towns, too, especially in the mining districts, it may be seen that rents are very low, and groceries high, compared with the weighted average.

6. Variation in Purchasing Power of Money, 1901 to March, 1913.—In several of the tables given in the preceding paragraphs, attention has been drawn to the fact that the index-numbers are not directly comparable either horizontally or else in the vertical columns. The reasons for this were also pointed out. By combining the figures given for the capital towns on page 1144 (a) shewing variations in cost of living from year to year in each town separately, and (b) shewing relative cost of living in the several towns during the year 1912, results which are in all respects comparable may be obtained. These are shewn in the following table, in which the average cost for the six capital towns in the year 1911 has been taken as the base. This base has been taken as equal to 20s., instead of 1000, as in the former tables.

PURCHASING POWER OF MONEY.—AMOUNTS NECESSARY ON THE AVERAGE IN EACH YEAR FROM 1901 TO 1st QUARTER OF 1913 TO PURCHASE IN EACH CAPITAL TOWN WHAT WOULD HAVE COST ON THE AVERAGE £1 IN 1911 IN THE AUSTRALIAN CAPITALS REGARDED AS A WHOLE.

Year.	Sydney.	Melb'ne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Towns.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1901 ...	18 2	17 3	15 2	17 1	20 4	17 3	17 7
1902 ...	19 11	17 11	15 10	17 1	21 4	17 9	18 7
1903 ...	19 6	17 6	15 7	16 7	21 5	17 10	18 2
1904 ...	17 9	16 11	14 6	16 1	20 7	17 0	17 2
1905 ...	19 1	17 5	15 2	17 3	20 8	17 7	18 0
1906 ...	19 0	17 5	15 5	17 8	20 3	17 10	18 0
1907 ...	18 10	17 4	15 8	17 8	19 6	17 7	17 11
1908 ...	20 1	18 5	16 11	18 10	19 9	18 3	19 0
1909 ...	20 2	17 11	16 10	19 7	19 6	18 11	19 0
1910 ...	20 3	18 8	17 4	19 11	20 3	18 10	19 5
1911 ...	21 0	18 10	18 1	20 11	22 3	18 11	20 0†
1912 ...	23 4	20 11	19 4	22 11	22 10	20 8	22 0
1912 (1st quarter)*	21 9	19 6	19 3	22 4	22 1	19 4	20 9
1912 (4th quarter)†	24 3	21 6	19 6	23 0	22 7	21 11	22 7
1913 (1st quarter)*	23 9	20 9	18 11	22 5	22 3	20 10	22 0

* January to March. † October to December. ‡ Basis of Table.

These figures shew not only the variations in cost of living from year to year in each town separately, but also (in the horizontal lines) the relative cost in the several towns in each year. Thus each value given for any town and year is directly comparable with any other value. It may be seen, for example, that 18s. 2d. in Sydney in 1901 was equivalent to 17s. 5d. in Melbourne, or to 20s. 3d. in Perth in 1906, and to 20s. on the average in all six towns in 1911, and to 23s. 9d. in Sydney in the first quarter of 1913.

While the figures in each vertical column shew the increase and decrease in cost of living from year to year in each town respectively, those in the horizontal lines shew the relative cost of living in any given year.

(i.) *Groceries and Food only.* The following table has been computed in the same manner as that indicated above, but relates to *groceries and food* (46 items) *only*. The average expenditure for the six capital towns in 1911 has again been taken as the basis of the table (= 20 shillings) and the figures are, of course, comparable throughout.

PURCHASING POWER OF MONEY.—GROCERIES AND FOOD ONLY.—AMOUNT NECESSARY ON THE AVERAGE IN EACH YEAR FROM 1901 TO 1st QUARTER OF 1913 TO PURCHASE IN EACH CAPITAL TOWN WHAT WOULD HAVE COST ON THE AVERAGE £1 IN 1911 IN THE AUSTRALIAN CAPITALS REGARDED AS A WHOLE.

Year.	Sydney.	Melb'ne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Towns.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1901 ...	18 4	19 4	19 4	20 7	23 8	20 3	19 4
1902 ...	21 4	20 4	20 4	20 6	25 6	21 0	21 1
1903 ...	20 7	19 6	19 9	19 8	25 8	21 1	20 4
1904 ...	17 6	18 4	17 10	18 10	24 3	19 8	18 5
1905 ...	19 5	19 1	18 11	19 10	25 2	20 7	19 8
1906 ...	19 3	18 11	19 2	19 8	24 9	20 11	19 7
1907 ...	18 9	18 6	18 11	19 0	23 11	20 2	19 1
1908 ...	20 7	19 11	20 6	20 2	24 6	21 1	20 7
1909 ...	20 3	19 0	19 8	20 6	24 3	21 10	20 1
1910 ...	20 0	19 2	20 0	20 0	25 0	21 6	20 1
1911 ...	19 9	18 8	20 4	20 5	26 11	21 2	20 0*
1912 ...	22 6	21 8	22 0	23 1	26 11	23 10	22 6
1912 (1st quarter)†	20 9	19 9	21 11	22 0	26 0	21 10	21 0
1912 (4th „)‡	23 6	22 3	22 3	23 6	26 1	25 9	23 2
1913 (1st „)‡	22 9	20 9	20 9	22 5	25 6	23 2	22 0

* Basis of Table. † January to March. ‡ October to December.

(ii.) *House Rent only.* The following table gives similar particulars for *house rent only*, the average for the six towns in 1911 being again taken as the basis of the table (= 20 shillings).

PURCHASING POWER OF MONEY.—HOUSE RENTS.—AMOUNT PAYABLE ON THE AVERAGE IN EACH YEAR FROM 1901 TO 1st QUARTER OF 1913 FOR HOUSE RENT IN EACH CAPITAL TOWN, COMPARED WITH A RENT OF £1 IN 1911 IN THE AUSTRALIAN CAPITALS REGARDED AS A WHOLE.

Year.	Sydney.	Melb'ne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Towns.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1901 ...	17 11	14 4	9 6	12 3	15 7	13 0	15 1
1902 ...	17 11	14 6	9 7	12 3	15 6	13 1	15 2
1903 ...	17 11	14 7	9 11	12 3	15 8	13 2	15 3
1904 ...	18 0	14 11	9 11	12 3	15 7	13 2	15 4
1905 ...	18 6	15 0	10 1	13 8	14 5	13 3	15 8
1906 ...	18 7	15 3	10 3	14 10	14 0	13 5	15 11
1907 ...	19 0	15 8	11 3	15 10	13 4	13 10	16 4
1908 ...	19 3	16 2	12 0	17 0	13 3	14 2	16 10
1909 ...	19 10	16 5	12 11	18 4	13 0	14 7	17 5
1910 ...	20 7	17 11	13 8	19 10	13 7	15 2	18 5
1911 ...	22 7	18 11	15 0	21 8	15 10	15 8	20 0*
1912 ...	24 6	19 10	15 8	22 8	17 2	16 2	21 3
1912 (1st quarter)†	23 1	19 3	15 8	22 9	16 7	15 10	20 6
1912 (4th „)‡	25 3	20 5	15 8	22 4	17 10	16 6	21 9
1913 (1st „)‡	25 4	20 10	16 5	22 5	17 10	17 7	22 0

* Basis of Table. † January to March. ‡ Oct to December.

7. **Cost of Living in Northern Territory, 1913.**—Returns have been received for the month of January, 1913, in regard to retail prices in Darwin. No particulars as to house rents are, however, yet available. The retail prices, which are shewn in detail in Appendix II. to Report No. 2, give the following results compared with average prices in the other thirty towns in the Commonwealth for which data are collected :—

**NORTHERN TERRITORY.—COST OF LIVING COMPARED WITH AVERAGE FOR
THIRTY OTHER TOWNS IN COMMONWEALTH, JANUARY, 1913.**

Particulars.	I. Groceries.	II. Dairy Produce.	III. Meat.	IV. Food and Groceries.*
Average 30 Towns ...	1,000	1,000	1,000	1,000
Darwin ...	1,595	1,302	1,284	1,404

* Weighted average of Groups I., II., and III. combined.

These results shew that in January, 1913, cost of food and groceries in Darwin was over 40 per cent. more expensive than the average for the other towns of the Commonwealth for which returns are collected.

8. **Seasonal Fluctuations in Cost of Living and Tables of Prices and House Rents, 1912.**—Particulars of monthly fluctuations in cost of living during the year 1912 are given in Report No. 2 (pages 57-8), while the actual prices and house rents upon which the index-numbers are based are given in Appendixes to Reports Nos. 1 and 2.

§ 7. Wholesale Prices.

1. **General.**—The results of an investigation into wholesale prices in Melbourne were given in some detail in Report No. 1, from 1871 to the end of September, 1912. In Report No. 2 summarised results were included for the whole of the latter year.

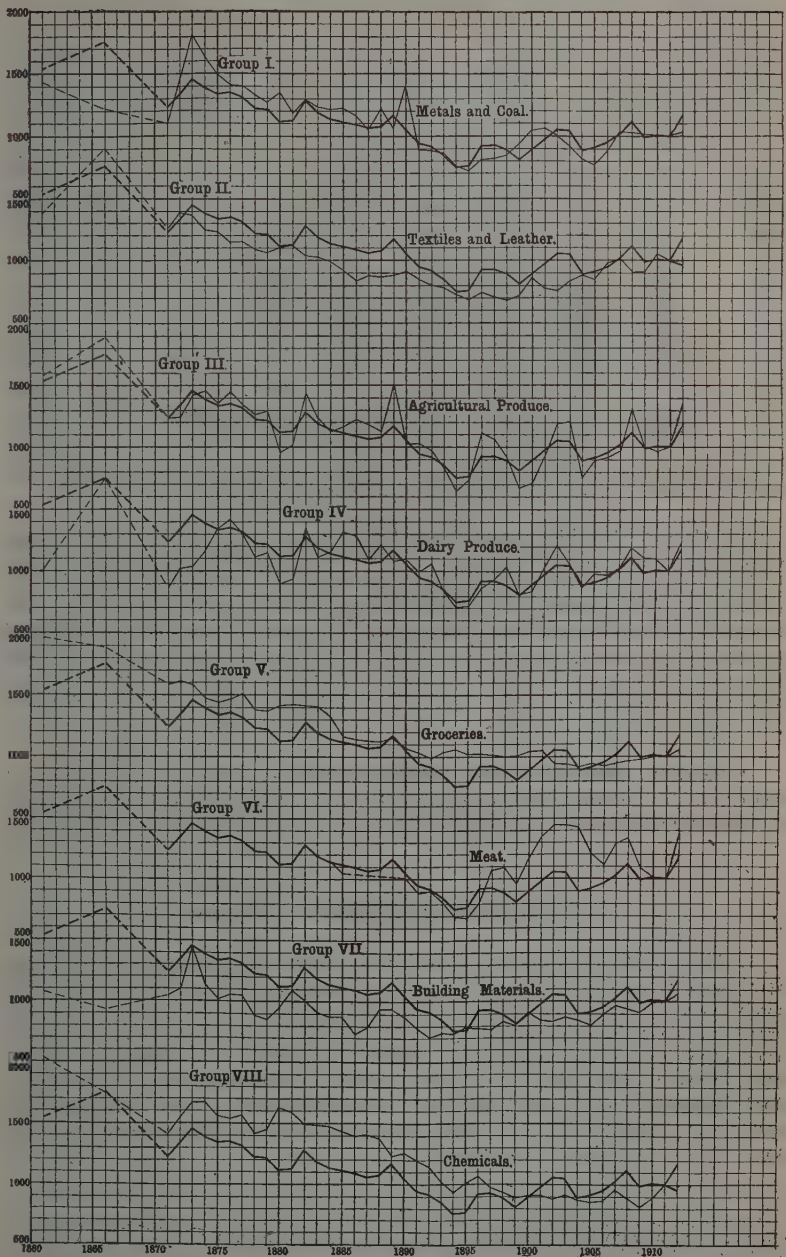
The index-numbers up to the year 1911 are based on the prices of eighty commodities, but since that year the number has been increased to ninety-two.* The methods followed for the computation of the wholesale price index-numbers are the same as those adopted in regard to retail prices. The commodities included the units of measurement for which the prices are taken, and the mass-units, indicating the relative extent to which each commodity, in the units of measurement specified, is used or consumed are shewn in a tabular statement in Report No. 2 (page 61).

2. **Index-Numbers and Graphs.**—Index-numbers have been computed for each group of commodities, as well as for all groups together. The index-numbers for the several groups, and for all groups together, are shewn in the following table.

(i.) *Table of Index-numbers.*—The index-numbers have in each case been computed with the prices in the year 1911 as base; that is to say, they shew the amount which would have had to be expended in each of the years specified in order to purchase what would have cost £1000 in 1911, distributed in purchasing the relative quantities (indicated by the mass-units) of the several commodities included in each group, and in all groups respectively. Thus, in the last column it may be seen that the cost of the relative quantities of the various commodities was 1229 in 1871, and 974 in 1901, as compared with 1000 in 1911, and 1170 in 1912. In other words, prices were lower in 1911 than in either 1871 or 1912, and the purchasing power of money in 1911 was, accordingly, greater. Again, prices were higher in 1911 than in 1901, and the purchasing power of money in the former year was therefore less.

* In the computation of the index-numbers for years prior to 1911, the aggregate expenditure on 80 commodities in 1911 is taken as base (= 1000), while for later years the aggregate expenditure on 92 commodities is taken.

MELBOURNE WHOLESALE PRICE INDEX-NUMBERS, 1861 TO 1912.



EXPLANATORY NOTE.—The scale for each graph is shewn by the figures on the left of the diagram, the line marked 1000 shewing the base line (for the year 1911) in each case. The heavy line in each graph represents the index-numbers for all groups combined, the light line indicating in each case the index-numbers for the separate group.

MELBOURNE WHOLESALE PRICES, INDEX-NUMBERS, 1861 to 1912, COMPUTED TO
YEAR 1911 AS BASE.

YEAR.	I. Metals and Coal.	II. Jute, Leather, &c.	III. Agri- cultural Produce, &c.	IV. Dairy Produce.	V. Gro- ceries.	VI. Meat.	VII. Building Ma- terials.	VIII. Chem- icals.	All com- modities together
1861 ...	1,438	1,381	1,583	1,008	1,963	...	1,070	2,030	1,538
1871 ...	1,096	1,257	1,236	864	1,586	...	1,044	1,409	1,229
1881 ...	1,178	1,115	1,012	935	1,431	...	1,091	1,587	1,121
1891 ...	895	847	1,024	995	1,033	888	780	1,194	945
1901 ...	1,061	774	925	1,029	1,048	1,345	841	917	974
1902 ...	1,007	756	1,193	1,215	945	1,447	837	881	1,051
1903 ...	923	834	1,209	1,059	936	1,443	875	921	1,049
1904 ...	821	885	754	876	916	1,427	845	875	890
1905 ...	772	850	894	980	942	1,209	801	859	910
1906 ...	882	978	916	972	923	1,110	896	864	948
1907 ...	1,037	1,017	973	1,020	948	1,294	968	961	1,021
1908 ...	1,033	901	1,312	1,198	968	1,335	935	891	1,115
1909 ...	1,014	907	1,000	1,119	978	1,088	911	815	993
1910 ...	1,004	1,052	969	1,100	999	1,008	996	898	1,003
1911 ...	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1912 ...	1,021	991	1,370	1,206	1,052	1,357	1,057	978	1,170

NOTE.—The figures given in this table are comparable in the vertical columns, but are not directly comparable horizontally. The index-numbers are reversible.

(ii.) *Graphs.*—The index-numbers are shewn for each group and for all groups combined in the graphs on preceding page. The heavy line, repeated on each graph, represents the index-numbers for the weighted average for all groups, and is shewn so that comparison may be made between the price levels for all commodities and those for the commodities comprised in each group separately. The index-numbers for the individual groups are represented by the light lines. The broken lines at the commencement of each graph shew the index-numbers for the separate years, 1861 and 1866, the continuous records commencing with the year 1871. The actual index-numbers for the whole period were given in Report No. 1.

3. *Seasonal Fluctuations and Tables of Prices.*—Information as to seasonal fluctuations in wholesale prices was given in Report No. 2 (page 64) and tables of prices of each commodity were given in Appendixes to Reports Nos. 1 and 2.

§ 8. Nominal and Effective Wages.

1. *General.*—In order to obtain an accurate measure of the progress of wage-earners, regard must be had to the purchasing power of wages, and the index-numbers based merely upon the records of *rates* of wages must consequently be subjected to some correction, inasmuch as they take no account of (a) variations in cost of living, and (b) loss through the extent of unemployment. The data furnished in this Report in respect, firstly, to cost of living index-numbers, and, secondly, relative percentages unemployed, afford the material by means of which the necessary adjustments can be effected with considerable precision. The results will show the variations in *effective wages* or in what may be called the "standard of comfort."*

* This expression must not be confused with "standard of living." A change in the standard of living necessarily involves a change in regimen (see Report No. 1), that is, a change in the nature or, in the relative quantity of commodities purchased, or both. A change in the "standard of comfort" merely implies a variation in effective wages, which variation may, or may not, result in, or be accompanied by, a change in "standard of living."

2. **Variations in Effective Wages and Standard of Comfort, 1891 to 1912.**—The following table contains the gist of the whole matter. The first correction to be made is that for the relative time lost through unemployment. Column I. shews the rate of wages index-numbers (see § IV. hereof), and Column II. the relative percentages unemployed (see § III.). Applying these percentages to the numbers shewn in Column I., and deducting the results from each corresponding index-number, so as to allow for relative loss of time, the figures in Column III. are obtained. These figures are then recomputed with the year 1911 as base, and are shewn in Column IV. In Column V. the cost of living index numbers are shewn, and in Columns VI. and VII. the effective wage index-numbers are given, firstly, for full work, and, secondly, allowing for lost time. These are obtained by dividing the figures in Columns I. and IV., respectively, by the corresponding figures in Column V.

A comparison between the figures in Columns I. and VI. (see graphs A and C below) shews the relation between the absolute rates of *wages* and the purchasing efficiency of these rates. The figures in Column VII (see graph B on next page) shew variations in *effective wages* after allowing not only for increased cost of living, but also for the relative extent of unemployment.

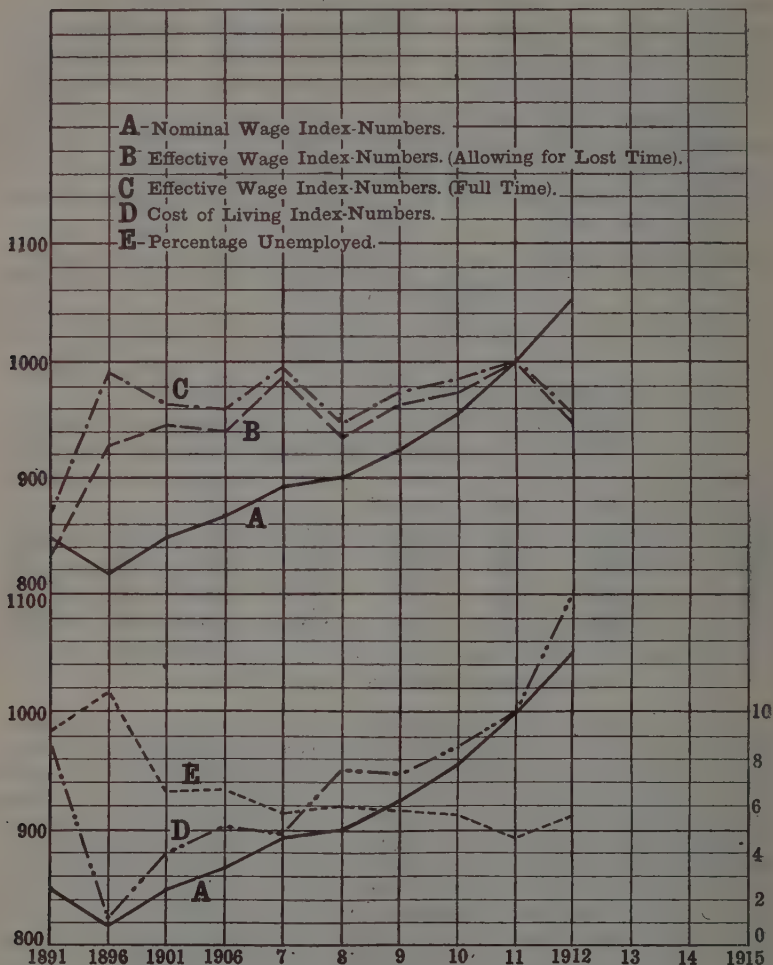
UNEMPLOYMENT, COST OF LIVING AND NOMINAL AND EFFECTIVE WAGE INDEX-NUMBERS, 1891 to 1912.

Year.	I. Nominal Wages Index- Numbers.	II. Percentage Unem- ployed.	Rate of Wages Index- Numbers, allowing for Lost Time.		V. Cost of Living Index- Numbers.	Effective Wages Index-Numbers.	
			III. Actual.	IV. Recomputed. (1911=1,000.)		VI. Full Work.	VII. Allowing for Lost Time.
1891	848	9.29	770	808	973*	872	830
1896	816	10.81	728	764	823*	901	928
1901	848	6.59	783	832	880	964	945
1906	866	6.67	808	848	902	960	940
1907	893	5.74	842	884	897	966	986
1908	900	5.98	846	888	951	946	934
1909	923	5.79	870	913	948	974	963
1910	955	5.63	901	945	970	985	974
1911	1,000	4.67	953	1,000	1,000	1,000	1,000
1912	1,051	5.55	993	1,042	1,101	955	946

* Based on Sydney prices only; exclusive of house rent.

The above figures are shewn on the diagram on page 1152. It may be seen that the nominal wage index-number has steadily increased (except in 1896), and that the increase has generally been at a somewhat greater rate (except in the year 1912) than the increase in the cost of living. The effective wage index-numbers (both "Full Work" and "Allowing for Lost Time") do not, on the other hand, shew any general increase in more recent years, but fluctuate between a range which reached its minimum in 1908, and its maximum in 1911. The figures prior to the year 1906 are available only at quinquennial periods, and it may be observed that the *effective wages* in 1891 were relatively very low owing to the large percentage of unemployment and the high cost of living. In 1896, though the percentage unemployed increased, the cost of living decreased to a greater extent, with the result that effective wages in that year were higher than in 1891. By 1901 the percentage unemployed had decreased considerably, with a consequent increase in effective wages. In 1907 there was again a large decrease in unemployment, causing the "peak" in the effective wage index-number for that year. The rise in the cost of living in 1908, which was a drought year, caused a considerable fall in effective wages. From that year, however, until the year 1911, the effective wage index-number steadily increased from 934 to 1000, but this increase was more than counterbalanced by the fall in 1912, which was due to the large increase in cost of living and the smaller increase in unemployment.

UNEMPLOYMENT, COST OF LIVING AND NOMINAL AND EFFECTIVE WAGE
INDEX-NUMBERS, 1891 to 1912.



EXPLANATORY NOTE.—From 1891 to 1906 figures are available at quinquennial periods only; each space in the horizontal scale up to the year 1906 represents, therefore, a period of five years. After that year each such space represents a single year. The two vertical scales on the left—each from 800 to 1100—represent the scales for the index-numbers shown in graphs A, B, and C, and A and D respectively, while the scale at the right of the diagram—from 0 to 10—represents the percentage unemployed shown in graph E.

3. Relative Standard of Comfort and Effective Wage Index-Numbers in Each State, 1912.—The figures given in the preceding paragraph furnish an indication of the progress of effective wages in the whole Commonwealth since 1891, and an analogous examination of the relative "standard of comfort" as between the several States may now be made. This is shewn in the following table, in the first line of which are given the wages index-numbers. These are subject to the qualifications referred to on page 1139 hereinbefore. The second line shews the "cost of living" index-numbers, the third line the percentage unemployed, and the last two lines the "effective wage" index-numbers firstly, on the assumption of full work, and, secondly, allowing for lost time. The figures in these two lines are computed in the same manner as the similar results were obtained in the table in the preceding paragraph.

RELATIVE STANDARD OF COMFORT AND EFFECTIVE WAGE INDEX-NUMBERS IN EACH STATE, 1912.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wth.
Nominal Wage Index-Numbers ...	998	982	984	998	1,158	876	1,000
Cost of Living Index-Numbers ...	1,056	949	900	1,033	1,094	929	1,000
Percentage Unemployed ...	4.95	6.71	4.62	5.07	5.82	3.37	5.55
Effective Wage (a) ...	945	1,035	1,093	966	1,058	943	1,000
Index-Numbers (b) ...	952	1,022	1,105	951	1,057	966	1,000

(a) Full work. (b) Allowing for lost time.

The figures given in the above table in regard to nominal wage index-numbers and percentage unemployed are subject to the qualifications expressed on pages 1139 and 1127 respectively. The results shew that effective wages in 1912, allowing for lost time, were highest in Queensland, followed in the order named by Western Australia, Victoria, and Tasmania, with New South Wales and South Australia (practically equal) coming last.

4. Relative Productive Activity and Effective Wages, 1871 to 1911.—The preceding tables refer to the matter of variations in nominal wages in regard to fluctuations in cost of living and extent of unemployment. Another important matter in any investigation into increases in rates of wages is the question of increase in relative output or production per head of population.

Figures are published annually showing the estimated *value* of production from industries in the Commonwealth, but these figures do not reveal whether there has been any increase in the *quantity* of productive activity, since the price-level from year to year is itself a factor in the determination of the values. Before, therefore, any estimate of the increase or decrease in the relative productive activity, that is, in the relative quantity of output or production per head of population, can be formed, the price element must be eliminated. This is done in the following table, in which Column I. shews the estimated *value* of production—(a) total, and (b) per head of mean population. In Column II. the estimated value of production per head of population is shewn in the form of index-numbers with the year 1911 as base, that is to say, the production per head in 1911 is made equal to 1000, and the values for the other years computed accordingly. In Column III. Melbourne wholesale price index-numbers are given; it is assumed that these index-numbers reflect, with substantial accuracy, variations in wholesale prices in the Commonwealth as a whole. The figures in Column IV. are obtained by dividing the figures for each year in Column II. by the corresponding figures in Column III. They shew the estimated relative productive activity per head of population, taking the year 1911 as the basic or standard year, the fluctuations due to variations in prices having been eliminated. In Column V. the effective wage index-numbers shewn in the graph on page 1152, (a) for full work, and (b) allowing for lost time, are included for comparative purposes.

ESTIMATED RELATIVE PRODUCTIVE ACTIVITY IN COMMONWEALTH, 1891 to 1911.

Year.	I. Estimated Value of Production.		II. Estimated Value of Production per Head Index- Number (1911=1000).	III. Wholesale Price- Index- Number (1911=1000).	IV. Estimated Relative Productive Activity Index- Number (1911=1000).	V. Effective Wages Index- Numbers (1911 = 1000).	
	(a) Total.	(b) Per Head of Popula- tion.				(a) Full Time.	(b) Allowing for Lost Time.
	£000	£					
1871 ...	46,700	27.89	661	1,233	536	...	...
1881 ...	71,116	31.34	746	1,124	664	...	...
1891 ...	96,087	30.06	715	945	757	872	834
1901 ...	114,585	30.23	719	974	738	964	945
1906 ...	147,043	36.21	862	948	909	960	940
1907 ...	167,446	40.61	966	1,021	946	996	986
1908 ...	164,957	39.33	936	1,115	839	946	934
1909 ...	174,503	40.82	971	993	978	974	963
1910 ...	187,734	43.92	1,045	1,003	1,042	985	974
1911 ...	188,745	42.03	1,000	1,000	1,000	1,000	1,000
1912 ...	*	*	*	1,170	*	955	946

* Not available.

These figures shew that the estimated relative productivity per head of population increased by no less than 86 per cent. from 1871 to 1911, and by nearly 33 per cent. from 1891 to 1911. Reference to the subjoined graph will shew that the increase was not uniform during the whole of the years specified, slight decreases occurring in 1901 and 1911, and a heavy fall in 1908, which was a year of severe drought. It may also be seen that the increase in productive activity per head has relatively been far greater than the increase in nominal wages and still greater than the increase in effective wages.

The index-numbers given in the above table are, of course, reversible. That is to say, if it be desired to take any year, other than the year 1911, as base, the necessary index-numbers can be obtained by dividing throughout by the index-number for the year which is to be taken as base, and multiplying the results by 1000. For example, if it be desired to compare the years 1906 to 1911, inclusive, with the year 1901 as base, the relative productive activity index-numbers must be multiplied throughout by $\frac{1000}{719}$, and the effective wage index-numbers (allowing for unemployment) by $\frac{1000}{964}$. The results are shewn in the following table, in which cost of living index-numbers (weighted average for six capital towns) are also included:—

RELATIVE PRODUCTIVE ACTIVITY, EFFECTIVE WAGES AND COST OF LIVING
IN AUSTRALIA, 1901 to 1912.

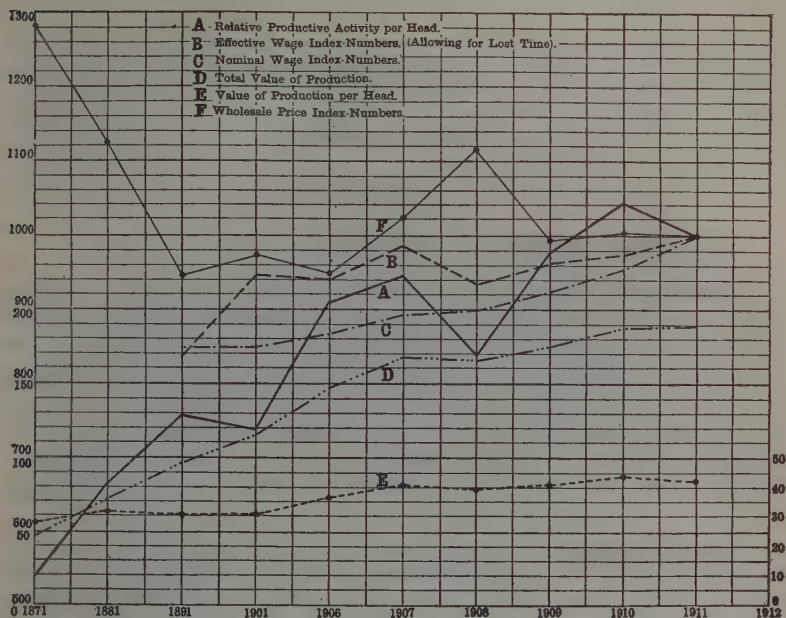
Particulars.	1901.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Relative Productive Activity	1,000	1,232	1,262	1,137	1,325	1,413	1,355	†
Nominal Rates of Wages ...	1,000	1,021	1,053	1,061	1,088	1,126	1,179	1,240
Effective Wages* ...	1,000	995	1,043	988	1,019	1,031	1,068	1,001
Cost of Living ...	1,000	1,025	1,019	1,031	1,075	1,107	1,186	1,251

* Allowing for lost time through unemployment.

† Not available.

While it may be dangerous, in view of the fluctuating nature of some of the figures, to compare individual years without due reference to other years, it may be seen that from 1901 to 1911 the relative productive activity increased from 1000 to 1355, or 35½ per cent., while nominal wages increased nearly 18 per cent. (or about one-half the increase in productive activity), effective wages increased 5.8 per cent., and cost of living 13.6 per cent. It should be remembered, however, that in the following year there was a heavy decline (see p. 1151) in the effective wage index-number.

RELATIVE PRODUCTIVE ACTIVITY AND NOMINAL AND EFFECTIVE WAGES
IN COMMONWEALTH, 1871 to 1911.



EXPLANATORY NOTE.—From 1871 to 1901 figures are available only at decennial periods; every double space on the horizontal scale up to 1901 represents, therefore, a period of 10 years. The double space from 1901 to 1906 represents a period of five years, while from that year onward each double space represents a single year. The upper figures on the left—from 500 to 1300—represent the scale for the index-numbers shown in graphs A, B, C and F; the lower figures on the left from 0 to 200—represent in millions of £ sterling (£200,000,000) the scale for graph D, showing the total value of production; while the figures on the right—from 0 to 50—represent in £ sterling the scale for the value of production per head of population shown in graph E.

SECTION XXXIV.

MISCELLANEOUS.

§ 1. Immigration.

(A) The Encouragement of Immigration into Australia.

1. **Introduction.**—Various measures have from time to time been adopted by the Commonwealth and State Governments, as well as by private societies and individuals, with a view to promoting the immigration of suitable classes of settlers into Australia. Some of the States of the Commonwealth are at present pursuing immigration policies of a vigorous nature; in others, relatively little is being done. The activities of the Commonwealth Government (which is vested with constitutional powers in regard to immigration under Sec. 51, xxvii., of the Constitution Act 1900) with respect to the encouragement of immigration, have hitherto practically been confined to advertising in handbooks, newspapers, and periodicals, the resources and attractions of Australia.

2. **State Immigration.**—The advertising in the United Kingdom of the resources of the individual States has been carried out by their Agents-General in London. Various means have been adopted, including newspaper advertising; the publication of illustrated pamphlets bearing on the resources and principal primary industries of the State; lectures by officers who have a knowledge of the conditions prevailing in the State; official displays at the principal agricultural, manufacturing, and similar exhibitions; cinematographic pictures typical of industrial life and scenic views; and pictures and lantern slides.

(i.) *Nominated and Assisted Passages.* Arrangements have been made by most of the State Governments with several of the principal shipping companies for substantial reductions in the amounts of passage money to be paid by immigrants. These reductions are generally granted to all persons desiring to settle on the land or engaging in any form of rural industry, to domestic servants, and to any others who satisfy one of the several Agents-General in London that they will make suitable settlers. Provision has also been made whereby settlers may nominate their relatives or friends for passage to Australia at greatly reduced rates.

(ii.) *Reception on Arrival.* Immigrants whose coming is advised are met on board the vessel on arrival by Government officers, who make themselves acquainted with the needs of the passengers and assist and advise them in various ways. To those desirous of settling on the land, information and assistance is rendered by officers of the Lands Department, and special concessions are granted in respect of fares on the Government railways. In other cases endeavours are made to obtain employment for each applicant according to his special needs and qualifications.

(iii.) *Numbers of Immigrants.* Particulars of the net immigration to the Commonwealth are given on pages 125 and 132, and of assisted immigration on page 137, hereinbefore.

(iv.) *Recent Immigration.* The years 1910, 1911, and 1912 marked a great step forward in Australian immigration generally, as several, if not all, of the State Governments adopted more active and direct means than had hitherto existed for making the advantages and opportunities of their respective States better known to the people of the United Kingdom, Europe, and America. In Victoria, to which State a small number of emigrants from America had been attracted (chiefly by the irrigable areas), it was decided to further enlighten American and Canadian home-seekers with regard to irrigated lands, and a delegation was accordingly sent to Vancouver by the Victorian Government to arrange for a special excursion of land-seekers, who arrived in Australia early in May, 1912. Many of them have since taken up land in the irrigable areas and other portions of the State. It appears likely that the success of the Victorian experiment will result in definite steps being initiated by the other States of the Commonwealth to attract population from similar sources.

(v.) *Uniform Rates for State-aided Immigrants.* The matter of State-aided immigration to Australia was discussed at the Premiers' Conference, held in Melbourne early in 1912, and this resulted, amongst other things, in the fixing of a scale of minimum rates of passage money which immigrants to any of the States would be charged in future, such rates to operate as from 31st March, 1912. It was expressly agreed, however, that, while no State should charge a lower amount than those mentioned, no objection would be made to higher rates being imposed. The minimum scale of passage rates arranged at the Conference is as follows:—(a) Farmers, farm hands, skilled artisans, and all nominated, assisted, or indented male immigrants, £6. (b) Adult females, £3. (c) Children of immigrants under 12 years of age, £1 10s. Age limits for all State-aided immigrants were also fixed as follows:—(a) Males, married women and widows, 45 years. (b) Single women, 35 years. The only free immigrants to be those whom the shipping companies carry free. It was also arranged that the maximum bonus payable to immigration agents be as follows:—(a) Per adult, £1; per child under 12 years, 10s. (b) In the case of an assisted immigrant recruited by an agent nominating his wife and family within twelve months of his arrival in the State, a similar bonus on account of the wife and family be paid to the agent. (c) In the cases of immigrants with capital of £200 and over, which capital is deposited with the Agent-General for transmission to the State, an additional bonus of 1 per cent. to the agent on the capital so deposited.

3. Initiation of Commonwealth Scheme.—For the financial year 1911-12 a sum of £20,000 was voted to the Commonwealth Department of External Affairs for advertising the attractions of Australia for settlers, farm workers, and tourists. The State Immigration Bureaux co-operate with the Department of External Affairs in keeping the High-Commissioner for Australia in London advised as to the openings for agricultural workers, and as to general information concerning matters of interest to intending settlers. A press advertising campaign has been initiated, the Commonwealth carrying on the general advertising of Australia by means of paragraphs and illustrated articles in British, European, and American publications, while the several States advertise for the class of immigrants they specially require. Bioscope films are utilised for the illustration of lectures. Exhibitions are held throughout the chief rural districts and at the important agricultural shows in Great Britain, and handbooks for settlers and tourists, as well as folders, and other publications have been issued. Pictorial posters are also utilised.

4. The High Commissioner for Australia and the Agents-General.—Intending settlers or immigrants may, on application, obtain information from the High Commissioner for Australia—

THE RIGHT HON. SIR G. H. REID, P.C., G.C.M.G., ETC.

COMMONWEALTH OFFICES,

72 VICTORIA STREET,

LONDON, S.W.

Information regarding individual States may be obtained from the officials specified below :—

AUSTRALIAN AGENTS-GENERAL.

<i>New South Wales</i>	T. A. COGHLAN, Esq., I.S.O.	123-125 Cannon St., London, E.C.
<i>Victoria</i> ...	Hon. PETER MCBRIDE ...	Melbourne Place, Strand, London
<i>Queensland</i> ...	Major Sir T. B. ROBINSON, K.B. ...	Marble Hall, 409-10, Strand, London
<i>South Australia</i>	HON. A. A. KIRKPATRICK ...	85 Gracechurch St., London, E.C.
<i>Western Australia</i>	Sir NEWTON J. MOORE, K.C.M.G. ...	15 Victoria St., Westminster, London
<i>Tasmania</i> ...	Hon. SIR JOHN MCCALL, K.B., M.D. ...	56 Victoria St., Westminster, London

(B) The Regulation of Immigration into Australia.

1. **Pre-Federal Restrictions.**—(i.) *Alien Races.* The several States of Australia had regarded it as desirable, long prior to Federation, to impose certain restrictions upon the admission of persons wishing to become inhabitants of those States. The influx of Chinese, for example, was limited by stringent statutes, and later general Acts were passed in some of the States which had the effect of restricting the immigration of other—principally Asiatic—races.

(ii.) *Undesirable Immigrants.* Further restrictions were placed upon the admission of persons who were undesirable as inhabitants, either for medical or moral reasons, or who were likely to be an economic burden upon the community.

2. **Powers and Legislation of the Commonwealth.**—(i.) *Constitutional Powers.* By Chap. I., Pt. V., Sec. 51, xxvii. and xxviii. of the Commonwealth Constitution Act the Parliament of the Commonwealth is empowered to make laws with respect to immigration and emigration and the influx of criminals. (See page 25 herein.)

(ii.) *Legislation.* The powers above specified have now been exercised by the Commonwealth Government, and the laws passed in pursuance thereof supersede the State laws above referred to.

The first Act passed, dealing with this matter, was the Immigration Restriction Act 1901, which contained provisions restricting the immigration of the classes of persons mentioned above. This Act, which contained clauses restricting the immigration of persons under contract, was subsequently repealed by the Contract Immigrants Act 1905, which amended and was substituted for the original Act, but both these Acts have since been amended by the Immigration Restriction Acts of 1908 and 1910, and the Immigration Act of 1912. The immigration of alien races and undesirable persons is now regulated by Immigration Acts 1901-12. Admission of immigrants under contract to perform manual labour is, however, still controlled by the provisions of the Contract Immigrants Act 1905, and will be permitted if the contract is in writing, is made by or on behalf of some person named, who must be resident in Australia, and approved by the Minister. Such approval will not be given if the contract is made with the view of affecting an industrial dispute or if the remuneration and other terms are not as advantageous to the contract immigrant as those current for workers of the same class at the place where the contract is to be carried out. (See page 1043 herein.)

There is an additional provision where the proposed immigrant is not a British subject born in the United Kingdom or descendant of such a person. In such case it has to be proved that there is a difficulty in the employers obtaining in the Commonwealth a worker of at least equal skill and ability.

In case of infraction of the law it is provided that the contract is absolutely void and the immigrant and employer are both liable to penalties, and the employer is also liable to pay the immigrant until he obtains employment, or, at the option of the immigrant, to provide expenses for his return to the country whence he came.

3. Prohibited Immigrants.—(i.) *Provisions of the Acts.* Persons comprised in the following classes are prohibited from entering the Commonwealth, viz. :—(a) Any person who fails to pass the dictation test; that is to say, who fails to write out not less than fifty words of a language prescribed by regulation when dictated to him by an officer administering the Act. (b) Any person not possessed of the prescribed certificate of health. (c) any idiot, imbecile, feeble-minded person, or epileptic. (d) Any person suffering from a serious transmissible disease or defect. (e) Any person suffering from pulmonary tuberculosis, trachoma, or with any loathsome or dangerous communicable disease, either general or local. (f) Any person suffering from any other disease or mental or physical defect, which from its nature is, in the opinion of an officer, liable to render the person concerned a charge upon the public or upon any public or charitable institution. (g) Any person suffering from any other disease, disability, or disqualification which is prescribed. (ga) Any person who has been convicted of a crime and sentenced to imprisonment for one year or more, unless five years have elapsed since the termination of the imprisonment. (gb) Any person who has been convicted of any crime involving moral turpitude, but whose sentence has been suspended or shortened conditionally on his emigration, unless five years have elapsed since the expiration of the term for which he was sentenced. (gc) Any prostitute, procurer, or person living on the prostitution of others.

Regarding (a) it may be stated that the Act of 1901 provided for the dictation of not less than fifty words of a European language. The Act of 1905 provided for the retention of this test until regulations be passed prescribing the languages to be employed. No such regulations have yet been made, and the provision of the Act of 1901 is therefore *de facto* still in force. It may be stated that in general practice the dictation test is not and never has been imposed upon persons of European race.

Regarding (b), the Amending Act of 1912 provides for the establishment of Commonwealth Medical Bureaux at places outside the Commonwealth, and the appointment of medical referees to examine intending immigrants and issue certificates of health in the prescribed form, on payment of a prescribed fee. A chief medical officer has already been appointed to take charge of the Bureaux attached to the High Commissioner's Office in London. He will arrange for the selection of suitable medical referees for appointment to act at various centres throughout the United Kingdom.

Provision is also made for the medical examination of, and the issue of certificates of health to intending immigrants who embark at a port where there is no medical referee, or who arrive in the Commonwealth without a certificate in the prescribed form.

Pending the proper organisation in the United Kingdom of the Medical Bureaux and the appointment of medical referees, the requirement that immigrants must produce a certificate of health on arrival in Australia will not be enforced.

(ii.) *Exemptions.* To these restrictions there are the following exemptions, viz. :—(a) Any person holding an exemption certificate. (b) Members of the King's regular land and sea forces. (c) The master and crew of any public vessel of any Government. (d) The master and crew of any other vessel landing during the stay of the vessel in a Commonwealth port. The exemption of members of a crew during the vessel's stay in port is subject to the production of identification cards to an officer on demand. This provision will not be enforced in respect of white members of a crew, but there is a further provision which empowers an officer to refuse any member of a crew permission to land unless he is satisfied that such person is free from a communicable disease. Before the ship can obtain her outward clearance the crew must, at the demand of an officer administering the Act, be mustered, and if any member of the crew be missing,

and would otherwise, in the opinion of the officer, have been a prohibited immigrant, then such person is deemed to be a prohibited immigrant, and until the contrary be proved, to have entered the Commonwealth contrary to the Act. (e) Any Commissioner of, or other person accredited from, the Imperial or any other Government.

(iii.) *General Provisions.* An immigrant may be required to pass the dictation test at any time within two years after he has entered the Commonwealth. This applies particularly to coloured persons, but any immigrant found within three years of entering the Commonwealth to be suffering from a prohibitory disease or defect may be deemed to be a prohibited immigrant unless it is proved to the Minister's satisfaction that he was free from the disease or disability at the time of his arrival in Australia.

A prohibited immigrant within the meaning of (a) above may, at the discretion of an officer, be allowed to enter the Commonwealth, or to remain within it, upon depositing £100 and within thirty days either obtaining an exemption certificate or departing from the Commonwealth; in either case the deposit is returned.

The punishment for breach of the Act by a prohibited immigrant is imprisonment for six months and deportation in addition to or in substitution for such imprisonment, if so ordered.

4. Liability of Shipmasters and Others.—The master, owners, agents, and charterers of a vessel from which a prohibited immigrant enters the Commonwealth are jointly and severally liable to a penalty not exceeding £100 for each entrant. The vessel may be detained as security, but may be released upon the giving of a bond with two sureties for the payment of any penalties; the vessel may be seized and sold in default of payment of penalties. The master, owners, agents, and charterers may be required to provide a return passage for the prohibited immigrant, and to pay for his maintenance during his detention prior to deportation. Masters of vessels are authorised to prevent such a person from landing and to obtain any necessary assistance.

Under the Immigration Restriction Act 1908, any person on board a vessel at the time of her arrival from any place outside Australia at any port in Australia who is not (a) a *bona fide* passenger of the vessel, or (b) a member of the crew of the vessel whose name is on the articles, is deemed to be a stowaway, unless the master gives notice that the person is on board the vessel, and does not permit him to land until an officer has had an opportunity of satisfying himself that the person is not a prohibited immigrant. The master, owners, agents, and charterers of a vessel are jointly and severally liable to a penalty of £100 for each stowaway brought in to any port in Australia. The Immigration Act 1912 provides for a penalty of £200 for each stowaway in cases where the master has been convicted of a similar offence within the preceding twelve months. Power is given to search vessels for stowaways. The Immigration Restriction Act 1910 provides penalties for being concerned in bringing immigrants secretly to the Commonwealth.

5. Agreements with other Countries.—Arrangements may be made with the Government of any country regulating the admission into Australia of the subjects or citizens of such country, such subjects being not, during the subsistence of the arrangement, required to pass the dictation test.

Persons who have resided either continuously or from time to time in the Commonwealth for a period of five years in the whole, and who are about to depart from it, being persons who, if they return, would be prohibited immigrants, may obtain a certificate of exemption entitling them to return.

Certificates of exemption are granted by the Minister of External Affairs, whose department administers the Act, and also by the collector of customs in each State.

6. Statistics.—The following tables shew the number of persons who desired but were not permitted to land, those who were allowed to land, and the nationality of the persons admitted.

**PERSONS ADMITTED OR REFUSED ADMISSION TO COMMONWEALTH UNDER
PROVISIONS OF IMMIGRATION RESTRICTION ACT, 1905 to 1912.**

Year.	Persons Admitted who Passed Education Test.	Persons Admitted without Passing Education Test.	Persons Refused Admission.
1905 ...	3	47,940	106
1906 ...	Nil	57,646	53
1907 ...	Nil	71,988	62
1908 ...	1	75,660	108
1909 ...	1	83,324	108
1910 ...	...	94,495	41
1911 ..	Nil	139,020	83
1912 ...	Nil	163,990	187

NATIONALITY OF PERSONS ADMITTED, 1905 to 1912.

Nationality.	*1905.		1906 (a)		1907.(a)	1908.(b)	1909.(b)	1910.(a)	1911.(a)	1912.(a)
	Without Test.	With Test.	Without Test.	Without Test.	Without Test.	Without Test.	Without Test.	Without Test.	Without Test.	Without Test.
EUROPEANS—										
Austrians ...	683	...	691	651	736	895	818	1,184	855	...
Belgians ...	25	...	33	64	45	35	50	84	95	...
British ...	39,975	...	47,396	60,173	64,374	71,201	81,455	124,061	146,602	...
Danes ...	125	...	269	280	327	273	269	393	371	...
Dutch ...	43	...	91	94	120	187	175	307	435	...
French ...	1,402	...	1,866	1,685	1,546	1,347	1,160	1,166	1,238	...
Germans ...	926	...	1,339	1,909	1,911	2,109	2,449	2,517	3,501	...
Greeks ...	121	...	240	202	296	327	380	583	736	...
Italians ...	734	...	839	992	902	1,078	883	1,365	1,632	...
Maltese ...	...	...	...	...	...	...	...	41	122	...
Poles ...	13	...	5	6	22	24	11	34	17	...
Portuguese ...	2	...	3	6	5	10	3	6	9	...
Rumanians ...	...	...	...	12	11	3	13	24	...	...
Russians ...	157	...	293	388	349	466	735	994	1,159	...
Scandinavians ...	281	...	776	1,173	825	891	1,210	1,384	1,303	...
Spaniards ...	35	...	32	86	57	56	49	128	118	...
Swiss ...	63	...	68	78	78	131	104	130	209	...
Turks ...	3	...	8	6	4	14	10	10	6	...
Other Europeans (c) ...	17	...	18	29	112	16	22	27	(d) 57	...
AMERICANS—										
N. Americans ...	603	...	867	889	687	692	746	914	1,386	...
S. Americans ...	...	...	12	15	10	14	13	17	37	...
American Indians ...	...	...	...	...	...	...	...	31	9	...
Negroes ...	15	...	4	9	4	6	14	13	47	...
West Indians ...	3	1	...	13	23	6	13	11	8	...
ASIATICS—										
Afghans ...	7	...	3	9	15	3	2	14	17	...
Arabs ...	3	...	...	8	3	1	1	1	18	...
Burmese ...	...	...	...	...	...	1	...	...	...	...
Chinese ...	1,269	...	1,134	1,494	1,771	1,729	1,819	2,009	2,250	...
Cingalese ...	15	...	6	12	10	10	14	4	17	...
East Indians ...	...	1	...	...	...	...	...	...	...	...
Eurasians ...	...	...	...	...	...	6	14	7	13	...
Pilipinos ...	74	...	120	57	27	37	66	17	13	...
Hindoos ...	146	...	75	139	74	130	156	188	157	...
Japanese ...	251	...	356	521	555	509	565	459	698	...
Javanese ...	62	...	52	1	...	52	4	12	6	...
Malays ...	289	...	436	370	230	309	302	479	326	...
Syrians ...	51	...	66	58	45	73	95	104	75	...
OTHER RACES—										
Maoris ...	1	...	2	8	48	108	62	31	32	...
Mauritians ...	...	...	...	...	3	3	4	9	2	...
Pacific Islanders ...	98	...	156	121	89	94	54	69	92	...
Papuan ...	415	...	368	493	430	439	622	139	196	...
St. Helena Blacks ...	...	...	...	...	1	1	...	...	...	...
Unspecified ...	33	...	32	30	14	31	141	(e) 65	102	...
Total ...	47,940	3	57,646	71,988	75,660	83,324	94,495	139,020	163,990	

(a) No persons were admitted after passing the test in either of the years 1906, 1907, 1910, 1911, or 1912. (b) One person was admitted, after passing the test, in each of the years 1908 and 1909. (c) Not specified. (d) Bulgarians. (e) Including 63 Timorese.

§ 2. Patents, Trade Marks, and Designs.

1. **Devolution of Jurisdiction upon the Commonwealth.**—Prior to the establishment of Federation, and for a few years thereafter, each Australian State possessed independent jurisdiction in respect of patents, copyrights, trade marks, and designs, and had, with the exception of Tasmania in regard to copyrights, enacted its own laws. Any person, therefore, who desired to obtain the grant of a patent, or the registration of any copyright, trade mark, or design had necessarily, with the exception aforesaid, to incur the trouble and expense of making separate applications. The Commonwealth Constitution Act conferred upon the Federal Parliament power to legislate respecting these matters. (See page 25 hereinbefore.) The Patents Act of 1909 applied the laws relating to patents for inventions, to the territory of Papua.

The State Acts, though in general based upon the Imperial Statutes dealing with these subjects, were not wholly governed by them. The Commonwealth Acts, both in regard to principle and practice, have the same general foundation, but in some respects have been modified and brought into line with the totality of Australian experience.

2. **Patents.**—The first Commonwealth Patents Act was passed in 1903, and was amended in 1906, 1909, and 1910. (See page 43 hereinbefore.) Under these Acts, which are administered by a "Commissioner of Patents," the power of the States to grant patents was abolished, and their functions in that respect were transferred to the Commonwealth. A single Commonwealth patent now gives throughout the Commonwealth and the territory of Papua that protection which formerly could only be obtained by procuring a patent in each State and the said territory. The rights of State patentees or the patentees in the territory of Papua are in all cases reserved to them. The holder of a State patent in force may obtain, for a period not exceeding the unexpired time thereof, a Commonwealth patent for the invention comprised in the State patent, provided however, that any State other than the State in which the patent under the States Patent Act was granted may be excepted from the patent if the Commissioner of Patents is satisfied that the invention either (a) is not novel, (b) has been made the subject of a pending application, or (c) has been published, in such State. Comparatively small fees, totalling £8, are now sufficient to obtain for an inventor protection throughout the Commonwealth; and the only renewal fee (£5) is payable before the expiration of the seventh year of the patent, or within such extended time, not exceeding one year, and upon payment of further fees as may be allowed.

(i.) *Applications for Patents.* Any of the following persons may make application for a patent:—(a) The actual inventor. (b) His assignee, agent, attorney, or nominee. (c) The actual inventor or his nominee jointly with the assignee of a part interest in the invention. (d) The legal representative of a deceased actual inventor or of his assignee. (e) Any person resident in the Commonwealth to whom the invention has been communicated by the actual inventor, his legal representative, or assignee (if the actual inventor, his legal representative, or assignee is not resident in the Commonwealth). An application for a patent must be for one invention only, and must be made in the form prescribed, and lodged by being left at or sent by post to the Patent Office at Melbourne. It must be accompanied by either a provisional or a complete specification. The application must contain a declaration in the prescribed form setting out the facts relied on to support the application, and must be signed by the applicant before a witness.

(ii.) *Term for which Granted.* The term for the duration of every patent is limited to fourteen years from the date of application. A patent ceases if the patentee fails to pay the renewal fee within the prescribed time.

(iii.) *Opposition to Grant of Patent.* Within three months of the advertisement of the acceptance of a complete specification, or within such further time, not exceeding one month, as may be allowed by the Commissioner, any person may give notice at the Patent Office of opposition to the grant on any of the following grounds:—(a) That the applicant has obtained the invention from the opponent or from a person of whom he is the legal representative or assignee or nominee. (b) That the invention has not been communicated to the applicant by the actual inventor his legal representative or assignee (if the actual inventor his legal representative or assignee is not resident in the Commonwealth). (c) That the invention has been patented in the Commonwealth on an application of prior date or has been patented in a State. (d) That the complete specification describes or claims an invention other than that described in the provisional specification, and that the opponent has applied for a patent for such other invention in the interval between the leaving of the provisional and complete specifications. (e) Want of novelty. (f) Prior publication.

The case is heard and decided by the Commissioner, from whose decision an appeal lies to the High Court or the Supreme Court of the State in which the Patent Office is situated.

(iv.) *Single Patent for Cognate Inventions.* The Act of 1909 provides that two or more provisional specifications for inventions which are cognate or modifications one of the other and constituting a single invention and may be combined in one complete specification, upon which a single patent may be granted in respect of the whole of such applications.

(v.) *Patents of Addition.* Special provisions are made for granting patents to an applicant or patentee in respect of any improvement on his invention. Such patents are called "Patents of Addition." They are granted for a term of the same duration as that of the original patent, or to such of that term as is unexpired, and in respect of such patents no renewal fee is payable.

(vi.) *Amendments.* Amendments to specifications by way of disclaimer, correction, or explanation may be allowed on request to the Commissioner, provided that the specification, if amended as requested, does not claim an invention substantially larger than, or different from, the original invention. Any person may oppose an amendment on giving notice of opposition at the Patent Office. Amendment of other documents is provided for by the regulations.

(vii.) *Revocations of Patents.* Revocation of a patent may be obtained by petition to the High Court or the Supreme Court of a State. Every ground on which a patent might at common law be repealed by *scire facias* is available as a ground of revocation. A petition of revocation may be presented by either (a) the Attorney-General or person authorised by him, (b) any person alleging that the patent was obtained in fraud of his rights or of the rights of any person under or through whom he claims, or (c) by any person alleging that he or any person under or through whom he claims an interest in any trade, business, or manufacture had publicly used, made, or sold within the Commonwealth before the date of the patent anything claimed by the patentee as his invention, or (d) any person alleging that he or any person under or through whom he claims was the actual inventor of any invention included in the claim of the patentee.

(viii.) *Compulsory Working and Licenses.* At any time not less than four years after the date of a patent, and not less than two years after the 13th December, 1911, any person may apply to the High Court or the Supreme Court of the State in which the Patent Office is situated for an order declaring that the patented article or process is not manufactured or carried on to an adequate extent in the Commonwealth. From

and after the time when any such order may take effect, the patent is not deemed to be infringed by the manufacture or carrying on in the Commonwealth of the patented article or process, or by the vending within the Commonwealth of the patented article made within the Commonwealth. Any person interested may, after the expiration of two years from the granting of the patent, present a petition to the Commissioner alleging that the reasonable requirements of the public with respect to a patented invention have not been satisfied and praying for the grant of a compulsory license or, in the alternative, for the revocation of a patent. If the parties do not come to an arrangement between themselves, the Commissioner, on being satisfied that a *prima facie* case has been made out, must refer the petition to the High Court or the Supreme Court of the State in which the Patent Office is situated. If the Commissioner is not satisfied that a *prima facie* case has been made out he may dismiss the petition.

(ix.) *Restoration and Surrender of Patents.* The Act of 1906 provides for the restoration (under certain conditions) of applications for patents which may have lapsed through default of an officer of the Patent Office. Provision is made by Section 85A of the Act of 1909 whereby a patent which has become void owing to the patentee's failure to pay any prescribed fee within the prescribed time, may, on certain conditions being complied with, be restored.

A patentee may surrender a State patent for an invention for which a Commonwealth patent has been granted in terms of section 7; or, by permission of the Commissioner, subject to the leave of the Court or consent of the parties in a petition for revocation, may surrender a Commonwealth patent.

(x.) *Contracts and Proceedings.* Subject to certain provisions specified in the amending Act of 1909, no patentee may enforce conditions of contract which will restrict the rights of the purchaser, lessee, or licensee from using any article or process supplied or owned by any person other than the patentee or from acquiring from the patentee any article not protected by the patent. Such contracts made prior to the Act of 1909 may be determined by three months' notice from either party.

Any person threatened by circular or advertisement with proceedings for infringement may apply for an injunction and damages, unless the threatening party shows due diligence in prosecuting an action.

(xi.) *International Protection of Patents.* The Patents Act contains provisions under which the international arrangements for the protection of patents contained in the Imperial Acts could be made applicable to the Commonwealth by order of the King-in-Council. The necessary proclamation was issued by the Imperial Government as regards England and Australia on the 1st February, 1907, and as regards all other countries in the International Convention on the 5th August, 1907. Applicants for patents, subject to the country in which first application is made being a party to the arrangement, are now, therefore, if they apply in Australia within twelve months of their first foreign application, entitled to receive patents for their inventions in priority to other applicants, and such patents have the same date as the date of the first application abroad. Corresponding arrangements have also been made by the Commonwealth with New Zealand.

(xii.) *Patent Attorneys.* Any person on passing the prescribed examination, and on paying a fee of £5, may be registered by the Commissioner as a patent attorney. A solicitor may practise as a patent attorney without passing the prescribed examination and without being registered as a patent attorney. No person may describe himself as a patent attorney, or as a patent agent, or as an agent for obtaining patents unless he is registered or entitled to practise as a patent attorney.

(xiii.) *Patent Office Publications.* Complete specifications are printed shortly after they become open to public inspection by acceptance, or under Section 121 of the Act. Each specification is open to public inspection. A number of publications, of which a list may be found in the Australian Official Journal of Patents, is on sale at the Government Printing Office, Melbourne.

The *Australian Official Journal of Patents* is issued weekly, and contains lists of applications and proceedings, with illustrated notes of accepted complete specifications. A supplementary annual volume contains statistics, indexes to names of persons concerned, classified indexes to subject matter of applications lodged, and a numerical index to proceedings on Commonwealth applications which have been advertised during the year; there are also names and number indexes to proceedings on State applications.

(xiv.) *Applications Filed, Provisional Specifications Accepted, and Letters Patent Sealed.* The numbers of individual inventions in respect of which applications were filed in the States or Commonwealth during each year from 1905 to 1912 inclusive are shewn in the following table. The number of applications accompanied by provisional specifications and the number of patents sealed in respect of applications made in each year are also shewn.

PATENTS.—APPLICATIONS FILED AND LETTERS PATENT SEALED IN THE
COMMONWEALTH, 1905 to 1912.

Year	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
No. of Applications	2,685	2,743	2,903	2,840	3,309	3,605	3,497	4,071
" " accompanied by provisional specifications	1,528	1,547	1,678	1,811	2,165	2,294	2,290	2,273
Letters patent sealed on applications of each year	1,468	1,536	1,563	1,407	1,744	1,982	1,997	297*

* Up to the 30th December, 1912.

(xv.) *Revenue of Patent Office.* The revenue of the Commonwealth Patent Office for each year from 1907 to the end of the year 1912 is shewn in the subjoined table:—

REVENUE OF COMMONWEALTH PATENT OFFICE, 1907 to 1912.

Particulars.	1907.	1908.	1909.	1910.	1911.	1912.
Fees collected under	£	£	£	£	£	£
States Patents Acts	3,746	2,006	1,703	1,940	768	118
Patents Acts 1903-10	13,612	14,146	14,087	17,042	19,640	18,542
Receipts from publications	155	146	216	208	237	305
Petty receipts	34	32	33	33	48	50
Total	17,547	16,380	16,039	19,223	20,693	19,015

3. **Trade Marks.**—The remarks made concerning the unification of the patent system of the Commonwealth apply equally to trade marks. Under the Trade Marks Act 1905, which came into force on the 2nd July, 1906, the Commissioner of Patents is appointed to act also as "Registrar of Trade Marks." The Trade Marks Act of 1905 was amended by the Patents, Trade Marks, and Designs Act 1910, assented to on the 14th November, 1910, and by the Trade Marks Act 1912, and is now cited as The Trade Marks Act 1905-1912. The principal objects of the amending Act were to enlarge the scope of marks

capable of registration, and repeal the provisions of the Act of 1905 relating to the "Workers Trade Mark," the provisions regarding which were held to be unconstitutional (see p. 1043 *ante*). Special provisions for the registration of a "Commonwealth Trade Mark" are contained in the Act of 1905 and are applicable to all goods included in or specified by a resolution passed by both Houses of Parliament that in their opinion the conditions as to remuneration of labour in connection with their manufacture are fair and reasonable.

(i.) *Essential Particulars of Trade Marks.*—

Section 15. "A registrable trade mark shall consist of essential particulars with or without additional matter."

Section 16. (1) "A registrable trade mark must contain or consist of at least one of the following essential particulars:—(a) The name of a company, individual, or firm represented in a special or particular manner; (b) the signature of the applicant for registration or some predecessor in his business; (c) an invented word or invented words; (d) a word or words having no direct reference to the character or quality of the goods, and not being according to its signification a geographical name or a surname; (e) any other distinctive mark, but a name, signature, or word or words, other than such as fall within the descriptions in the above paragraphs (a), (b), (c) and (d) shall not, except by order of the Registrar, Law Officer, or Court, be deemed a distinctive mark."

(2) "For the purposes of this section 'distinctive' means adapted to distinguish goods of the proprietor of the trade mark from those of other persons."

(3) "In determining whether a trade mark is so adapted, the Registrar, Law Officer, or Court may, in the case of a trade mark in actual use, take into consideration the extent to which such user has rendered such trade mark in fact distinctive for the goods with respect to which it is registered or proposed to be registered."

(ii.) *State Registrations.* State registrations cease to be in force at the expiration of fourteen years from the date of the Commonwealth Act, or at the time when, under the State Trade Marks Act, the trade mark would, if after the commencement of the Commonwealth Act no fee for the continuance of its registration were paid, first become liable to removal from the register, whichever first happens. It is also provided that no fee shall be receivable nor shall any act be done after the commencement of the Commonwealth Act for the continuance of the registration of a trade mark under a State Act. Commonwealth registration of a State registered mark may be effected, and the fact of its registration in a State prior to the coming into force of the Commonwealth Act, may entitle the registered proprietor in the State to Commonwealth registration, notwithstanding the existence of defects which might be ground for refusal of an application for the registration of a new trade mark.

(iii.) *Duration of Registration and General Provisions.* The registration of a trade mark is for a period of fourteen years, but may be renewed from time to time. International and intercolonial arrangements for the mutual protection of trade marks may be made in a manner similar to that provided for the protection of patents. In this regard Australia has become a party to the International Convention for the protection of industrial property. Registration may be opposed by any person lodging a notice of opposition at the Trade Marks Office within three months after the advertisement of the application, or such further time, not exceeding three months, as may be allowed.

(iv.) *Publications.* The *Australian Official Journal of Trade Marks* is issued weekly, and contains lists of applications and proceedings, with representations of marks (when

accepted) sought to be registered. *Designs.* Lists of registered owners of designs and the subject matter of applications are published weekly in the official Journal of Trade Marks. Indexes to names of applicants and subject matter of applications are compiled and are on sale.

4. **Designs.**—The Designs Act of 1906 came into operation on the 1st January, 1907, being subsequently amended by the Patents, Designs and Trade Marks Acts 1910, and the Designs Act 1912, and is now cited as the Designs Act 1906-12. Under this Act a Commonwealth Designs Office has been established and the Commissioner of Patents appointed "Registrar of Designs."

(i.) *Registration.* Any new and original design which has not been published in Australia before the lodging of an application for its registration may be registered in respect of all or any of the articles enumerated in the classification contained in the regulations, which comprise jewellery, paperhangings, carpets, floor-cloths, lace, hosiery, millinery, wearing apparel, textile fabrics, bookbinding, and articles composed wholly or chiefly of a variety of solid substances. A separate application must be made in respect of each class in which the owner of the design desires it to be registered. After an application for the registration of a design has been lodged the design may be published and used without prejudice to the validity of the registration.

(ii.) *Duration of Copyright in Designs.* The registration takes effect as from the date of the lodging of the application, and, subject to the provisions of the Act, remains in force for a period of five years from that date. Provision is made by the amending Act of 1912 for an extension of the period of registration to 15 years, subject to applications for extension being made and the prescribed fees paid before the expiration of 5 and 10 years respectively. The owner of a registered design must within two years after registration, substantially use the design, or cause it to be used, in Australia, and if he fails to do so the copyright ceases. If, however, such design is used in any manufacture abroad, the above period is limited to six months.

(iii.) *General.* The Act also contains provisions regarding the remedies for infringement of designs and the rectification of the register. Arrangements for the international and intercolonial protection of copyright in designs were made by the same proclamation referred to above with regard to patents and trade marks. The owner of a registered design must cause each article to which the design is applied to be marked before delivery for sale with the prescribed mark to denote that the design is registered.

5. **Applications for Trade Marks and Designs.**—The following table gives particulars of trade mark and design applications received and registered under the Commonwealth Acts from 1907 to 1912 inclusive:—

**TRADE MARK AND DESIGN APPLICATIONS RECEIVED AND REGISTERED
UNDER COMMONWEALTH ACTS, 1907 to 1912.**

Applications.	1907.	1908.	1909.	1910.	1911.	1912.
RECEIVED.						
Trade Marks	2,065	1,580	1,688	1,729	1,977	1,803
Designs	176	155	187	186	203	235
REGISTERED.						
Trade Marks	1,395	3,150	1,455	1,190	1,323	1,389
Designs	77	180	166	160	180	211

The following table shews the revenue of the Trade Mark and Design Office during the years 1909 to 1912:—

REVENUE OF TRADE MARK AND DESIGN OFFICE, 1909 to 1912.

Particulars.	1909.			1910.			1911.			1912.		
	Trade Marks.	Designs.	Publications.	Trade Marks.	Designs.	Publications.	Trade Marks.	Designs.	Publications.	Trade Marks.	Designs.	Publications.
	£	£	£	£	£	£	£	£	£	£	£	£
Fees collected under State Acts	61	...	...	164	...	...	56	...	...	67	...	...
Fees collected under Commonwealth Acts	4,893	170	117	4,655	171	90	5,018	180	127	5,012	198	98
Total	4,954	170	117	4,819	171	90	5,074	180	127	5,079	198	98

§ 3. Old-age and Invalid Pensions.

1. **General.**—A system for providing for the relief of the aged poor by some means which did not involve the stigma associated in so many minds with the idea of charitable aid, and which, while protecting the recipients from actual want, still left to them as large a degree of freedom as possible, has long been sought for by economists, statesmen, and social reformers. The difficulties surrounding a satisfactory solution of the question are numerous and great, and various schemes have been propounded with the object of overcoming them. Two of the principal objections which have been urged against the introduction of a general system of old-age pensions are—

- (i.) its costliness;
- (ii.) its tendency to induce thriftlessness.

The former is undoubtedly a serious difficulty, since in any normally constituted population the number of persons aged say sixty-five years and upwards will represent about 5 per cent. of the total population, and the provision of the funds required to pay to these a sum which would provide them with even the barest necessities of life would be a very considerable burden upon the State Treasury. To reduce this burden various suggestions have been made, of which probably the most effective have been those which provide, the one for a contribution to the pension fund by the pensioner during his earlier years, and the other for a reduction of the amount of pension payable to those in receipt of income from other sources. The former of these is the principle which has been acted upon in the scheme in operation in Germany, while the latter is that which underlies the schemes in vogue in the Commonwealth, New Zealand, and the United Kingdom.

The objection which has sometimes been raised to the payment of old-age pensions on the score of the tendency to thriftlessness thereby induced is one which, in Australia, at all events, is not accorded much weight, the general feeling being that the number of cases in which the prospect of a pension of, say, 10s. per week from sixty-five onwards would lead to thriftlessness in earlier years, is so small as to be practically negligible.

2. Introduction of Old-age Pensions into Australia.—The credit of introducing old-age pensions into the Southern Hemisphere belongs, not to the Commonwealth, but to her sister dependency, the Dominion of New Zealand, where pensions have been payable since 1st April, 1898. The first State of the Commonwealth to make provision for the payment of old-age pensions was Victoria, whose legislation on the subject came into operation on 18th January, 1901. Later in the same year, viz., on 1st August, 1901, the pension system of New South Wales came into force, while in the case of Queensland old-age pensions became payable from 1st July, 1908. Finally, an Act providing for the payment of old-age pensions throughout Australia was passed by the Commonwealth Parliament in 1908, pension payments thereunder commencing on 1st July, 1909. This Act superseded the State Acts in so far as provision for old-age is concerned.

3. Commencement of Commonwealth Act.—The Commonwealth Invalid and Old-age Pensions Act was assented to on the 10th June, 1908, and payment of old-age pensions commenced as from 1st July, 1909. Provision is also made in the Act for the payment of invalid pensions. The part of the Act relating thereto, however, did not come into operation on the commencement of the Act, but it was provided that it should commence on some subsequent date to be fixed by proclamation. This proclamation was made on the 19th November, 1910, the first payments thereunder being made on the 15th December, 1910.

4. Administration of Commonwealth Act.—The general administration of the Act is, subject to the control of the Minister, placed in the hands of the Commissioner of Pensions, who is assisted by a Deputy Commissioner appointed in each State. Power is given to the Commissioner and the Deputy Commissioners to summon witnesses, receive evidence on oath, and require the production of documents for the purposes of the Act.

Each State is divided into districts, each of which is placed in charge of a Registrar, whose duties consist in receiving and investigating pension claims and in keeping such books and registers as are required for carrying out the provisions of the Act.

5. Pension Age.—For an old-age pension the age qualification is similar to that previously in force in New South Wales under the State Act, viz., attainment of the age of sixty-five years, or, in the event of permanent incapacitation for work, attainment of the age of sixty years. The Act also provides that the age qualification for women may be fixed by proclamation at sixty years instead of sixty-five. This proclamation was made on the 19th November, 1910, the first payments thereunder being made on the 15th December, 1910. For an invalid pension the age qualification is attainment of the age of sixteen years if accompanied by permanent incapacitation for work.

6. Length of Residence.—In the original Act of 1908 the residential qualification for an old-age pension was the same as that of the New South Wales Act, viz., continuous residence for twenty-five years. Owing, however, to the fact that in the other two States in which pensions were payable under the State régime the residential qualification was only twenty years, an amendment of the Act was passed by the Federal Parliament in August, 1909, reducing the Commonwealth term to twenty years also, thus rendering impossible the chance of lapse of pension through transfer from State to Commonwealth. For an invalid pension continuous residence for at least five years is required. In neither case, however, is continuous residence in Australia deemed to have been interrupted by occasional absences not exceeding in the aggregate one-tenth of the total period of residence. The applicant for any pension must be residing in Australia on the date when he makes his claim, and in the case of an invalid pension must have been incapacitated while in Australia.

7. Rates of Pension.—The rate of pension payable, whether for old age or invalidity, is required by the Act to be determined by the Commissioner or one of the Deputy Commissioners, and is to be fixed at such amount as he deems reasonable and sufficient, having regard to all the circumstances of the case, but must not exceed £26 per annum in any event, nor be at such a rate as will make the pensioner's income, together with pension, exceed £52 per annum.

8. Limitations in respect of Income and Property.—With a view to restricting the pensions to persons actually needing assistance, provision was made in all the State Acts reducing the payment when the applicant already possessed income or property above a given amount. This principle is also embodied in the Commonwealth Act. In the case of independent income it has already been mentioned that the pension payment must be so modified that the aggregate income, inclusive of pension, does not exceed £52 per annum. Payments received by way of benefit from any registered friendly society, or during illness, infirmity, or old age from any trade union, provident society, or other society or association, are not, for the purposes of the Commonwealth Act, treated as income. As regards accumulated property, the pension is subject to a deduction of £1 per annum for every complete £10 by which the net capital value of the property exceeds £50. Also, if both husband and wife are pensioners (except when they are living apart pursuant to any decree, judgment, order, or deed of separation), the deduction in the case of each of them shall be £1 for every complete £10 by which the net capital value of the accumulated property exceeds £25. From the capital value of accumulated property is deducted the capital value of a home in which the pensioner permanently resides, and all charges and encumbrances existing on the property, other than the home. Accumulated property whether in or out of Australia, to the value of £310 or upwards will disqualify for a pension, as will also an applicant's direct or indirect deprivation of himself of such property with the object of obtaining a pension. In the case of husband and wife, except where they are living apart pursuant to any decree, judgment, order or deed of separation, the net capital value of the accumulated property of each is deemed to be half the total net capital value of the accumulated property of both, and the amount of property in such case allowed prior to deduction is £50 if including, and £25 if not including a home.

9. Character of Applicant for Pension.—In all the State Acts provision was made that the recipients of old-age pensions should be persons of good moral character, and, in New South Wales and Victoria, imprisonment for extended periods would act as a disqualification. In the Commonwealth Act it is also provided that "no person shall receive an old-age pension unless he is of good character," but a similar provision is not made in the case of invalidity.

10. Number of Commonwealth Claims and Old-age Pensions.—During the first year of practical working of the Commonwealth Act, viz., that ended 30th June, 1910, the number of cases considered was 76,168. Of these 39,875 were cases in which a State old-age pension was exchanged for one payable by the Commonwealth. The remaining 36,293 were new applications received during the year, of which 30,526 were granted, 3921 were rejected, and 1846 were still in course of consideration on 30th June, 1910. During the year ending 30th June, 1911, a further number of 20,260 were considered.

Details of the several States as at 30th June, 1912, are as follows :—

COMMONWEALTH OLD-AGE PENSIONS.—YEAR ENDED 30th JUNE, 1912.

	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lt'h.
Claims examined during year ending 30th June, 1912 ...	4,874	4,573	2,001	1,130	599	626	13,803
Claims rejected ...	611	524	461	47	97	59	1,799
Claims granted ...	4,263	4,049	1,540	1,083	502	567	12,004
Transfers from other States ...	232	172	87	67	88	40	686
Existing 30th June, 1911 ...	28,160	23,722	9,894	6,885	2,976	3,865	75,502
	32,655	27,943	11,521	8,035	3,566	4,472	88,192
To be deducted—							
Deaths ...	2,421	2,697	785	592	190	360	7,045
Cancellations, and transfers to other States ...	566	797	300	154	152	107	2,076
	2,987	3,494	1,085	746	342	467	9,121
Old Age Pensions existing on 30th June, 1912 ...	29,668	24,449	10,436	7,289	3,224	4,005	79,071

11. **Sexes of Old-age Pensioners.**—Of the 79,071 persons in receipt of pension at 30th June, 1912, 34,897 (or 44 per cent.) were male, and 44,174 (or 56 per cent.) were female. Details for the several States are as follows:—

SEXES OF PENSIONERS, 30th JUNE, 1912.

State.	Males.	Females.	Total.	*Masculinity.
New South Wales ...	13,639	16,029	29,668	85.09
Victoria ...	10,234	14,215	24,449	71.99
Queensland ...	5,151	5,285	10,436	97.46
South Australia ...	2,821	4,468	7,289	63.14
Western Australia ...	1,608	1,616	3,224	99.50
Tasmania ...	1,444	2,561	4,005	56.38
Total ...	34,897	44,174	79,071	79.00

* Number of males to each 100 females.

12. **Ages and Conjugal Condition of Old-age Pensioners Admitted during 1911-12.**—The recorded ages of the 12,004 persons to whom pensions were granted during the year 1911-12 varied considerably, ranging from 1180 at age 60 to 1 at age 100. Particulars for quinquennial age groups are as follows:—

AGES AND CONJUGAL CONDITION OF PENSIONERS ADMITTED DURING 1911-12.

Age at Admission.	Males.				Females.				Grand Total.
	Single.	Married.	Widowed.	Total.	Single.	Married.	Widowed.	Total.	
60-64 ...	88	241	78	407	277	1,697	1,826	3,800	4,207
65-69 ...	697	1,559	721	2,977	133	713	887	1,733	4,710
70-74 ...	288	569	303	1,160	40	254	419	713	1,873
75-79 ...	93	183	142	418	14	93	292	399	817
80-84 ...	26	54	62	142	2	30	121	153	285
85-89 ...	2	13	25	40	1	4	31	36	76
90-94 ...	3	5	6	13	1	1	17	19	32
95 and over ...	1	...	8	4	...	...	...	...	4
Total ...	1,197	2,624	1,340	5,161	468	2,782	3,593	6,843	12,004

13. **Commonwealth Claims for Invalid Pensions.**—The situation as at 30th June, 1912, was as follows:—

COMMONWEALTH INVALID PENSIONS.—YEAR ENDED 30th JUNE, 1912.

	N.S.W.	Vic.	Q.	S.A.	W.A.	Tas.	Total C'wealth.
Claims examined during year ending 30th June, 1912 ...	1,957	1,798	788	506	269	436	5,749
Claims rejected: ...	448	402	172	74	52	67	1,215
Claims granted ...	1,509	1,391	616	432	217	369	4,534
Transfers from other States ...	13	16	3	10	6	1	49
Existing 30th June, 1911 ...	3,844	2,183	492	352	179	401	7,451
	5,366	3,590	1,111	794	402	771	12,034
Deduct—							
Deaths ...	404	373	96	68	21	57	1,019
Cancellations and Transfers to other States ...	135	55	26	19	7	10	252
	539	428	122	87	28	67	1,271
Invalid Pensions existing 30th June, 1912 ...	4,827	3,162	989	707	374	704	10,763

14. **Sexes of Invalid Pensioners.**—Of the 10,763 persons in receipt of an invalid pension on 30th June, 1912, 5548 or 51½ per cent. were male, and 5215 or 48½ per cent. were female. Details for the several States are as follows:—

SEXES OF INVALID PENSIONERS, 30th JUNE, 1912.

State.	Males.	Females.	Total.	*Masculinity.
New South Wales ...	2,549	2,278	4,827	111.90
Victoria ...	1,565	1,597	3,162	98.00
Queensland ...	555	434	989	127.88
South Australia ...	324	383	707	84.60
Western Australia ...	212	162	374	130.86
Tasmania ...	343	361	704	95.01
Commonwealth ...	5,548	5,215	10,763	106.39

* Number of males per 100 females.

15. Ages and Conjugal Condition of Invalid Pensioners Admitted during 1911-12.—The recorded ages of the 4534 persons who received invalid pensions in the period under review varied from 16 to 89. The following table gives particulars in decennial age groups after age 20:—

AGE AND CONJUGAL CONDITION OF INVALID PENSIONERS ADMITTED IN 1911-12.

Age at Admission.	Males.				Females.				Grand Total.
	Single.	Married.	Widowed	Total.	Single.	Married.	Widowed	Total.	
16-19	123	...	...	123	115	...	...	115	238
20-29	222	28	...	250	261	8	7	276	526
30-39	175	112	6	293	182	30	31	243	536
40-49	181	227	21	429	159	82	94	335	764
50-59	261	479	85	825	189	284	375	848	1,673
60-69	184	232	99	515	27	54	75	156	671
70-79	16	27	16	59	6	13	28	47	106
80 and over ...	2	4	5	11	1	1	7	9	20
Total	1,164	1,109	232	2,505	940	472	617	2,029	4,534

16. Cost of Administration.—Under the State régime the cost of administration differed considerably in the several States, and for 1908-9 represented in New South Wales 4.17 per cent. of the amount actually paid in pensions. In Victoria for the same year the corresponding percentage was 0.70. During the year 1911-12 the total cost to the Commonwealth of administering the Old-age and Invalid Pensions Department was £41,794, or 1.95 per cent. of the amount actually paid in pensions. It is probable that the cost of administration in future years will represent a smaller percentage on the amount paid in pensions. Details concerning the cost of administration for 1911-12 are as follows:—

	£
Salaries	13,270
Temporary assistance	840
Services of magistrates, registrars, clerks of courts, and police ...	5,399
Commission to Postmaster-General's Dept., at 12s. 6d. per £100 paid	12,893
Postage and telegrams	1,954
Other expenses	7,438
	<u>41,794</u>

The actual sum disbursed in Old-age and Invalid Pensions in the financial year 1911-12, apart from the cost of administration, was approximately £2,148,034.

17. Estimated Cost of Commonwealth Old-age Pension Scheme.—In the first two issues of the Year Book estimates of the probable cost of the Commonwealth scheme were given. The former of these, based largely on the old-age pension experience of New South Wales, taken in conjunction with the census results of 31st March, 1901, and the subsequent estimates of increase of population, brought out a sum of £1,580,000 as representing the probable cost, including administration, if the New South Wales scheme had operated throughout the Commonwealth during 1906-7. In the second issue of the Year Book the results of a more extensive investigation were published. These were obtained from an analysis of the New Zealand old-age pension experience, combined with the Australian Census results of 1881, 1891 and 1901, and gave an estimate for each year

from 1909-10 to 1926-7 of the probable cost, including administration, of the Commonwealth scheme as provided in the original Act. The figures so obtained for the year 1909-10, were £1,440,000; for 1914-15, £1,616,000, and for 1919-20, £1,854,000. The reduction of the residential qualification from 25 to 20 years under the Amending Act of 1909, had the effect of somewhat increasing the number eligible for pensions, and consequently of increasing the probable cost. The extent of this increase was estimated at 4 per cent., and in the third issue of the Year Book the estimated cost under the present system, on the assumption that the Commonwealth conditions would not differ materially from those of New Zealand, was given as follows:—1909-10, £1,498,000; 1914-15, £1,681,000; and 1919-20, £1,928,000. It will be seen that the actual cost for 1909-10, inclusive of administration, viz., £1,534,476, exceeded this last estimate by £36,476, or practically by the cost of administration.

With reference to the probable cost of invalidity pensions for the Commonwealth, the only experience available is that of New South Wales, where the number in force on 30th June, 1909, was 3714, and the cost, inclusive of administration, was approximately £79,200. On this basis, the cost of such a scheme for the Commonwealth, as a whole, may be roughly estimated at about £210,000 per annum for the present, increasing in subsequent years probably in proportion to the population.

18. Liability Undertaken in Granting Old-age Pensions.—As an indication of the extent of the responsibility which an old-age pension scheme involves, it may be mentioned that in connection with the evidence tendered to the Commonwealth Commission on Old-age Pensions a computation was made of the total liability in respect of accrued pensions which the Commonwealth would have incurred if, at 31st March, 1901, the date of the Census, 39 per cent. of the persons aged sixty-five and upwards were entitled to pensions of ten shillings per week. The present value at that date of the liability so computed was £10,415,820. (See Minutes of Evidence of Royal Commission on Old-age Pensions, p. 80.)

§ 4. Maternity Allowance.

The Federal Parliament, during the session of 1912, passed an Act (assented to on 10th October, 1912) providing under certain circumstances for the payment of maternity allowances. The scope and main provisions of the Act will be gathered from the following sections and sub-sections, given in full:—

4. "Subject to this Act, there shall be payable out of the Consolidated Revenue Fund, which is hereby appropriated accordingly, a maternity allowance of Five pounds to every woman who, after the commencement of this Act, gives birth to a child, either in Australia or on board a ship proceeding from one port in the Commonwealth or a Territory of the Commonwealth to another port in the Commonwealth or a Territory of the Commonwealth."
5. (1) "A maternity allowance shall be payable in respect of each occasion on which a birth occurs, and the child is born alive or is a viable child, but only one allowance shall be payable in cases where more than one child is born at one birth."
6. (1) "The maternity allowance shall be payable only to women who are inhabitants of the Commonwealth or who intend to settle therein."
- (2) "Women who are Asiatics or are aboriginal natives of Australia, Papua, or the islands of the Pacific, shall not be paid a maternity allowance."

The following table gives particulars of the working of the Act from 10th October, 1912, when it came into operation:—

**STATEMENT SHEWING PARTICULARS OF CLAIMS WITH REGARD TO THE
MATERNITY ALLOWANCE OF £5, FROM 10th OCTOBER, 1912,
to 26th APRIL, 1913.**

State.	Granted.	Rejected.	Under Consideration.	Total.
	No.	No.	No.	No.
New South Wales	22,404	208	613	23,225
Victoria	16,274	82	487	16,843
Queensland	8,677	52	168	8,897
South Australia	5,340	40	99	5,479
Western Australia	3,847	48	132	4,027
Tasmania	2,627	22	60	2,709
Commonwealth	59,169	452	1,559	61,180

§ 5. Local Option.

1. **General.**—The principles of local option as to the sale of fermented and spirituous liquors have been applied in all the States of the Commonwealth. The last State to adopt these principles was Western Australia, where provision was made for a system of local option by the Licensing Act 1911.

2. **New South Wales.**—The Acts in force relating to local option in this State are the Liquor Amendment Acts 1905 and 1907. There were formerly two Acts which dealt with the subject, viz., the Licensing Acts 1882 and 1883, consolidated by the Liquor Act 1898. Under the Act of 1905, which came into force on the 1st January, 1906, the local option vote is to be taken in every electorate on the day fixed for the poll therein at each general election. The option with regard to licenses extends to publichouses, wineshops, and clubs, and the persons entitled to vote are those entered on the Parliamentary electoral rolls. The resolutions to be submitted, and the effects of such resolutions, if carried, are given *in extenso* in previous issues. The first local option vote under the Act of 1905 was taken at the general election in 1907, and the second at the election in 1910. The following statement shews the number of electorates in which each of the resolutions was carried:—

NEW SOUTH WALES.—EFFECTS OF LOCAL OPTION VOTES, 1907 and 1910.

Particulars.	General Election, 1907.		General Election, 1910.	
	Number of Electorates.	Number of Votes.	Number of Electorates.	Number of Votes.
<i>Results in favour of—</i>				
(a) Continuance	25	209,384	76	324,973
(b) Reduction	65	75,706	14	38,856
(c) No license	Nil	178,580	Nil	212,889

3. **Victoria.**—The Acts dealing with the subject of local option as to the sale of fermented and spirituous liquors, and with the compulsory closing of hotels in this State are the Licensing Acts 1890, 1906, and 1907. Other Acts, now repealed, which dealt with the subject, are the Licensing Acts 1876, 1885, and 1888.

The last division of the Act of 1906 relates to the subject of local option; this division, however, does not come into force until the 1st January, 1917. In the meantime, in order to reduce the number of victuallers' licenses in Victoria, a Licenses Reduction Board has been constituted.

(i.) *The Licenses Reduction Board.* Although the operations of this Board are not conducted in accordance with the principles of local option, the duties of the Board are, until the 31st December, 1916, after which date a system of local option comes into force under the Act of 1906, to reduce the number of licenses in excess of the statutory number, and to award compensation according to the scheme provided for by that Act. The Board consists of three members at a salary of £800 per annum each, who may not engage in any business or employment other than the duties of their office as members of the Board. The Board was first appointed on the 21st May, 1907. A Compensation Fund has also been established under the Act, and is raised by means of a compensation fee at the rate of 3 per cent. on the value of liquor purchased by every licensed victualler. The owner of the premises is chargeable with two-thirds, and the tenant with one-third of the compensation fee. The total amount paid into the Compensation Fund was £48,233 for the year 1907, £48,543 for 1908, £49,300 for 1909, £48,875 for 1910, £51,716 for 1911, and £55,275 for 1912. When any reduction of licensed premises has been made, the remaining hotels, which will be benefited, are to bear a *pro rata* assessment to make up the amount of license fees lost. The amount so lost up to the end of the year 1912 was £9875, which sum has been apportioned among 1868 hotels in proportion to the benefit which, in the opinion of the Board, they will derive from the closing. By an amendment to the Act in 1912, the Board has been given discretion in certain circumstances to allot less than the amount lost. The maximum compensation, which is payable out of the Compensation Fund referred to above, is to be based on the results of the three years preceding the 31st December, 1906, in the case of owners, and of the three years preceding the 31st December, 1905, in the case of licensees. Up to the 31st December, 1912, 614 hotels had been closed by the Board, 176 of this number having surrendered their licenses. In all cases compensation, where claimed, was awarded, the total paid amounting to £294,831, or an average of £485 each. 168 of these hotels were situated in the metropolitan district, while the remaining 446 were in country districts. In 119 cases no claims for compensation were made by the licensees. The following table shews particulars of the operations of the Board up to the 31st December 1912.

VICTORIA.—OPERATIONS OF LICENSES REDUCTION BOARD, 31st DECEMBER, 1912.

Particulars.	Licenses in December, 1906.			Hotels De- prived of Licenses	Compensation Awarded.		Hotels Surren- dered.	Compensation Awarded.	
	Number in Exist- ence.	Statutory Number.	Number in Excess.		Owner.	Licensee.		Owner.	Licensee.
Metropolitan & Suburban	1,020	877	401	160	£ 117,189	£ 21,203	8	£ 4,688	£ 824
Country	2,440	1,622	976	270	98,269	15,146	176	33,896	3,616
Total ...	3,460	2,499	1,377	430	215,458	36,349	184	38,584	4,440

*In some districts the number of hotels was below the statutory number; in these districts the total number of hotels less than the statutory number was 418.

No reduction of any licensed premises is allowed in any licensing district in which the number of licensed premises is below the statutory number, but new licenses may, until 1917, be granted in such districts provided that a majority of the electors vote in favour of the increase, and that at least one-third of the number of electors on the roll record their votes. The statutory number varies yearly with the change of the population. The number of hotels below the statutory number in the districts referred to for the year 1912 was 829.

Where a deprivation sitting is held before 30th June the Acts specify that a deprived license expiring on or before the 31st December following shall not be renewed. Where the sitting takes place after 30th June the license may be renewed for a period making in all six months from the first day of such sitting. To avoid difficulties on this score the Board holds its deprivation sittings in the first half of the year and its compensation and re-allotment sittings in the second half. Surrenders take effect on the date fixed by the Board at the time of acceptance.

In addition to those scheduled above, the Board, up to the 22nd May, 1913, had deprived 51 hotels of their licenses, of which 4 were surrendered, making a grand total of 665.

In previous issues reference has been made to the methods of procedure to be followed on the coming into force of the system of local option on January 1st, 1917.

3. Queensland. The local option clauses of "The Liquor Act of 1912" provide for the following:—

- (i.) The conditions under which new licenses may be granted until the completion of the business of the Licensing Court in April, 1915.
- (ii.) The continuance of the local option clauses of "The Licensing Act of 1885," until the 31st December, 1915.
- (iii.) The institution of a new scheme, under which electors from and after the year 1916, will have the opportunity of voting every three years on the question of reduction of licenses.

(i.) *New Licenses.* With regard to the granting of "new licenses" from the 1st April, 1913, and until the completion of the business of the Licensing Court in April, 1915, it is provided that no new licensed victualler's or wine seller's or provisional licenses shall be granted, unless at a local option vote of the electors of the local option area in which the premises or proposed premises are situated, a resolution "that new licenses shall be granted in this local option area" has been carried.

In this connection it is provided that applications are to be made to the Court, but that the consideration of them is to be postponed until the result of a local option vote on the abovementioned resolution has been ascertained.

The area in which the poll shall be taken is fixed by the Court, and may be—(a) an electoral district; (b) an electoral division of an electoral district; (c) a group of two or more of such divisions of the same electoral district, provided that the whole of such local option area is wholly comprised within one and the same licensing district.

The Minister fixes a date in the second month next succeeding the sittings of the Court at which the application was made, on which the poll shall be taken. The principal electoral registrar supplies the roll, and the poll is taken at the polling places appointed for the election of senators.

A local option vote following on an application for a license may be taken in any of the years 1913, 1914, and 1915 in a local option area, but having been taken once shall not be taken again during those years in the same local option area.

If the resolution is carried, the Court may, but need not, grant applications; but if the resolution is not carried, the Court shall not grant any application during the said years in the said local option areas.

(ii.) *Continuance of Present System until 1916.* With the exception of the third resolution, viz., "that no new licenses be granted," the local option provisions of "The Licensing Act of 1885" remain in full force and effect until the 31st December, 1915, with the following modifications and additions:—(a) The deposit of £10 in connection with a petition for a poll has been dispensed with, and the cost up to £25 will be defrayed from Consolidated Revenue. (b) Any area in which a poll has already been

taken, shall be, and remain an area without any change of boundaries until the 31st December, 1915. (c) If at the commencement of this Act in any area, the first resolution, that is, that the sale of intoxicating liquors shall be prohibited, has been carried and is in force, or there are not any licensed victualler's licenses or wine seller's licenses in force, and the third resolution, that is, that no new licenses shall be granted, has been carried and is in force, such resolution shall until revoked by the carriage of resolution "new licenses," have the same effect as if "prohibition" had been carried in the area. (d) No poll shall be taken in a newly constituted area, unless such area is either a whole area of a local authority or a division or divisions thereof. (e) The roll to be used shall be the voter's roll of the local authority, prepared as for an extraordinary election.

Any resolution remaining unrevoked on the 31st December, 1915, remains, with respect to the area concerned, in full force and effect until superseded by a vote under the Act of 1912.

(iii.) *General Local Option.* The first vote may be taken in the year 1916, on the same day as the election of senators takes place, and the vote will be by ballot.

The vote will be taken on the request of one-tenth of the number of electors in an area, which is defined in the request, and such area may be:—(a) an electoral district, (b) an electoral division of an electoral district, or, (c) a group of two or more divisions of an electoral district, provided that the whole of such local option area is wholly comprised within one and the same electoral district.

There must be a separate request for each resolution on which a vote is required to be taken.

The resolutions on which a vote may be taken are:—(a) reduction by one-fourth of the existing number, (b) further reduction by one-fourth of the existing number, (c) further reduction by one-fourth of the existing number, (d) prohibition, and (e) new licenses.

The principal electoral registrar supplies the roll, and the cost of the poll is a charge against Consolidated Revenue.

The first vote shall be on resolution (a), or resolution (e), or both (a) and (e).

If (e), that is, "new licenses" is carried, it remains in force only until next senate election, and if not again carried, has no further force or effect. Any resolution, other than (e), new licenses, remains in force until superseded by another vote.

In order to carry resolutions (a), (b), or (c), thirty-five per cent. of the electors must vote and a simple majority prevails. To carry "prohibition" or "new licenses" three-fifths of the votes given at the poll must be in favour. A local option vote on resolution (d), "prohibition" or resolution (e) "new licenses" may be taken in the year 1925, notwithstanding that resolutions (a), (b), or (c), have not been previously submitted, or, having been submitted, were not carried. When a local option vote has been taken in an area, no further vote can be taken in that area until the expiration of two years and six months. If a resolution to reduce licenses has been carried, the Court will decide which houses are to be closed, and the decision will be final. When the Court has determined that any license shall cease, such license shall, at the expiration of eighteen months next following the period for which the same was granted, cease and not be renewed. If prohibition is carried, every license of any description shall, at the expiration of eighteen months next following the expiration of the period for which the same was granted, cease and shall not be renewed. Thereupon and until "new licenses" has been carried, it shall not be lawful (whether from outside the local option area or otherwise) to sell, supply, deliver, barter, or otherwise dispose of any liquor:

(iv.) *Resolutions Adopted, 1912.* The following statement shews the number of areas in which each resolution was either in force or precluded up to the 31st December, 1912:—

QUEENSLAND.—NUMBER OF AREAS IN WHICH LOCAL OPTION RESOLUTIONS WERE IN FORCE OR PRECLUDED FROM ADOPTION, 31st DECEMBER, 1912.

Particulars.	Resolution (a).	Resolution (b).	Resolution (c).	Total.
No. of areas in which resolutions in force ...	4	2	121	127
No. of areas in which resolutions precluded from being put in force ...	2	2	48	52
Total ...	6	4	169	179

The only resolution upon which a poll had been demanded within the metropolitan district (ten-miles radius) was resolution (c); this resolution is in force in thirty-one areas within the metropolitan district and has been precluded in three areas within that district.

5. South Australia.—In this State the subject of local option is now regulated by Part V. of the Licensing Act 1908. Acts which formerly dealt with the subject were the Licensed Victuallers Amendment Act 1891, the Licensed Victuallers Further Amendment Act 1896, and the Local Option Act 1905.

Under the Licensing Act of 1908 each electoral district for the House of Assembly is constituted a local option district, and each electoral district may be divided into local option districts by proclamation of the Governor. A quorum consisting of 500 electors, or one-tenth of the total number of electors, whichever be the smaller number, in any district may petition the Governor for a local option poll. The persons entitled to vote at the poll are those whose names appear on the electoral roll and who reside in the local option district. The option extends to (a) publicans' licenses, (b) wine licenses, (c) storekeepers' Australian wine licenses, (d) storekeepers' licenses, and (e) club licenses.

(i.) *Resolutions to be Submitted.* The following are the resolutions which are to be submitted, under the Act of 1908, at every poll:—(a) That the number of licenses be reduced. (b) That the number of licenses be not increased or reduced. (c) That the number of licenses be increased in the discretion of the Licensing Bench. One ballot paper to apply to all classes of licenses, and any one of the resolutions is carried by a majority of the valid votes recorded. If the votes recorded in favour of resolution (a) do not constitute a majority, such votes are to be added to the votes in favour of resolution (b). If the sum of the votes recorded in favour of resolutions (a) and (b) do not constitute a majority, such votes are to be added to those recorded in favour of resolution (c).

(ii.) *Effects of Resolutions.* As to each class of license of which there are not less than three licenses current within the local option district at the date of the poll, the first resolution is to be taken to mean that the number of licenses so current be reduced by one-third, and as to each class of license of which there are less than three current, the first resolution is to be taken as equivalent to the second resolution.

The constitution of special Benches consisting of three members, appointed by the Governor, is provided for in order to give effect to the first resolution. A special Bench also deals with resolutions for the reduction of licenses adopted before the passing of the Act of 1908, but not then given effect to.

(iii.) *Resolutions adopted.* Under the Acts prior to that of 1908 resolutions to reduce the number of licenses had been adopted in nine districts, in four of which, however, the polls were subsequently declared void. Special Benches were appointed in January, 1909, to deal with the determinations of electors in those districts in which the results of the polls were in favour of reducing the number of licenses, viz., in the districts of Port Adelaide, East Torrens, and Sturt. In accordance with the determinations of these Benches it was decided in February and March, 1909, that the following licenses, namely—thirty-five publicans', one wine, eleven storekeepers', colonial wine, and one storekeeper's—should not be renewed.

(iv.) *Local Option Polls.* On the 2nd April, 1910, local option polls were taken under the Act of 1908 in twenty-four districts; the electors in the remaining nine local option districts did not petition for polls. Resolution (a), that the number of licenses be reduced, was carried in only one district, Wallaroo; in the remaining 23 districts resolution (b), that the number of licenses be not increased or reduced, was carried. At the General Election of the House of Assembly held on the 10th February, 1912, no local option polls were held in any local option district.

6. *Western Australia.*—The law relating to local option in Western Australia is contained in Part V. (sections 75 to 86) of the Licensing Act 1911, which was assented to on 16th February, 1911, and came into force on the 7th April following. Prior to the passing of this Act there was no provision or any system of local option in Western Australia.

(i.) *Resolutions to be submitted.* Under the above-mentioned Act, a vote of electors is to be taken in every district in or before April, 1911, and in every third year thereafter (1920 excepted). The resolutions to be submitted are:—(a) That the number of licenses existing in the district continue. (b) That the number of licenses existing in the district be increased. (c) That the number of licenses existing in the district be reduced (d) That no licenses be granted or renewed in the district. If resolution (d) has been previously carried and is in force in the district the resolution submitted will be (e) That licenses be restored in the district. The resolutions (a), (c), and (d) are not to be submitted to the electors until after the 21st December, 1920. At the taking of every local option vote, the following questions will also be put before the electors:—(1) Do you vote that all new publicans' general licenses in the district shall be held by the State? and (2) Are you in favour of State management throughout the district? Resolutions (a), (b), and (c) are deemed to be carried if a majority in number of the votes given is in favour of any such resolution, provided that if resolution (b) has not been carried, the votes given in favour of that resolution shall, if resolution (a) has been submitted at the same time, be added to the votes given for resolution (a) and shall be deemed to have been given in favour of resolution (a). Resolution (d) is carried if three-fifths at least in number of the votes given are in favour of that resolution, provided that where it has not been carried, the votes given for it shall be added to those given for resolution (c). Resolution (e) is carried if three-fifths at least in number of the votes given are in favour of it. It is also provided that resolution (d) or (e) shall not be carried unless thirty per cent. or more of the number of electors in the licensing district vote for such resolution.

(ii.) *Effect of Resolutions.* If resolution (a) is carried, or in the case of a local option taken before the end of the year 1920, if resolution (b) is negatived, the number of licenses shall not exceed the number at the time of taking the vote. If resolution (b) is carried, the Licensing Court may increase the number of licenses. If resolution (c) is carried, the number of licenses at the time of taking the vote shall be reduced and

may be reduced to three-fourths of such number. If resolution (d) is carried, no licenses shall be granted, renewed or transferred. If resolution (e) is carried, licenses may be granted, renewed and transferred, but so that the number of licenses shall not be greater than the number held when the resolution (d) was carried in the district, and if it is not carried, the resolution (d) previously carried shall continue to have effect.

(iii.) *First Local Option Poll.* The first vote under the above provisions was taken on 26th April, 1911, the main question being confined (as prescribed by the Act when the vote is taken prior to 1920) to resolution (b) i.e., "that the number of licenses be increased," the only other questions submitted being those of State control of new publicans' general licenses and State management throughout all licensing districts.

The following table shows the result of this local option poll:—

**WESTERN AUSTRALIA.—RETURN SHEWING THE RESULT OF LOCAL OPTION
POLL OF 26th APRIL, 1911.**

Result of Local Option Poll.		Do you vote that all new Publicans' General Licenses be held by the State.		Are you in favor of State Management throughout all Licensing Districts.	
Votes given in favor of the number of Licenses in the various districts being increased.	Votes given in favor of the number of Licenses in the various districts not being increased.				
		Yes.	No.	Yes.	No.
4,554	17,623	27,007	14,387	26,631	14,944

7. *Tasmania.*—In this State the subject of local option is dealt with in Part VI. (sections 72 to 84) of the Licensing Act 1902, as subsequently amended by section 8 of the Licensing Act 1908, which later Act, however, does not come into full operation until the first of January, 1917. Other Acts which formerly dealt with the subject, but now repealed, are the Licensing Acts 1889 and 1890, the Inn Keepers Relief Act 1894, and the Licensing Act Amendment Act 1898. Under the Act of 1902, opposition to the grant of a license may be made (i.) by any resident ratepayer, (ii.) by petition of ratepayers resident in the neighbourhood, or (iii.) by local option poll.

(i.) *Opposition by Resident Ratepayer.* Any ratepayer resident in the district in which a house in respect of which an application for an hotel or publichouse certificate is intended to be made is situated, may, by giving five days' notice to the Clerk of Petty Sessions, oppose the grant of the certificate before the Licensing Bench. The objections which may be taken to the granting of a certificate for an hotel or publichouse license are as follows:—(a) That the applicant is of bad character; (b) that he has been convicted of certain specified offences; and (c) that the house in respect of which the application is made does not comply with the requirements of the Act. The objections which may be taken to the granting of a provisional certificate for an hotel license are:—(a) That the house does not comply with the requirements of the Act, and (b) that an hotel is not required in the neighbourhood

(ii.) *Petition of Resident Ratepayers.* The ratepayers resident in the neighbourhood of a house in respect of which an application for a license is made may petition the Licensing Bench against the granting of such license. The neighbourhood referred to is defined as meaning a space within a radius of 200 yards from the front door of the house if within a city, within a radius of 800 yards if within a town, and within a radius of two miles if the house is not situate within a city or town. If the petition is directed against the granting of a provisional certificate, and is signed by a majority of the resident ratepayers, the bench must refuse to grant the certificate.

(iii.) *Local Option Poll.* Any number of ratepayers, not less than seven, resident in the neighbourhood of the house in respect of which a provisional certificate or an hotel license has been applied for, may require, by petition lodged with the Clerk of Petty Sessions, that a poll of the ratepayers resident in the neighbourhood be taken upon the question whether such provisional certificate be granted or not. If a majority of the votes taken be against the granting of the certificate the Licensing Bench must refuse to grant it.

Particulars as to operations under Part VI. of the Act are not available.

§ 6. Preferential Voting.

1. **Introduction.**—The methods of election adopted in the early stages of representative institutions are now in many cases considered to fail to respond to the needs of the more complex political conditions of highly civilised communities, and it would appear that the movements which have taken place in favour of improved electoral methods are in keeping with the advances made in practically all other human institutions. The original system of exclusive majority representation has often resulted in an exaggeration of the majority, sometimes in the total suppression of the minority, and on other occasions in the return of a majority of representatives by a minority of the electors.* To remedy these evils various schemes of preferential voting have been devised, based upon the idea that one of the essentials of the realisation of self-government is that every responsible section of the community shall be able to give expression through its own representatives to its needs and desires in the assembly which is representative of the community, and which derives its authority from the fact that it is so representative. The systems of preferential voting which are in force in certain of the States of the Commonwealth are briefly described in this sub-section.†

2. **Systems in Force.**—Systems of preferential voting are now in force in the States of Victoria, Queensland, Western Australia, and Tasmania.

Preferential voting is not, however, a part of the electoral system of the Commonwealth, nor is it in operation in New South Wales or South Australia. In the former State the Electoral Act 1910, however, provides that if, as the result of the first ballot for the election of members of the Legislative Assembly, it is found that no candidate has received an absolute majority of votes, a second ballot shall be taken between the candidate who has received the highest number of votes and the candidate who has received the next highest number of votes, and requires the Returning Officer to decide the precedence of candidates for the purposes of the second ballot where the voting is equal by giving such casting vote or votes as may be necessary for this purpose, and to give a casting vote, if, as the result of the second ballot, the candidates receive an equal number of votes.

3. **Victoria.**—A system of preferential voting was brought into operation for the first time in this State under the provisions of the Preferential Voting Act 1911, on the occasion of the general elections for the Legislative Assembly. The law requires the elector to mark his vote by placing the numeral 1 on the ballot-paper opposite the name of the candidate for whom he votes as his first preference, and to then give contingent votes for all the remaining candidates (when there are more than two), by placing numerals 2, 3, 4, and so on as the case requires, opposite their names, so as to indicate, by such numerical sequence, the order of his preference. At the scrutiny, the number of first

* See "Proportional Representation," by J. H. Humphreys. Methuen & Co., London, 1911.

† Information supplied by R. C. Oldham, Esq., Commonwealth Chief Electoral Officer.

preference votes given at the election for each candidate is ascertained, and the candidate who has the greatest number of such first preference votes (if such number constitutes an absolute majority of votes) is declared elected.

If no candidate has an absolute majority of votes, the Returning Officer declares the candidate who has obtained the fewest first preference votes to be a defeated candidate, and, thereupon, opens all the parcels containing ballot-papers used at the election, and arranges such ballot-papers by placing, in separate parcels, all those on which a first preference is indicated for the same candidate and the full contingent votes are also given for all the remaining candidates, omitting ballot-papers which required to be rejected; and the ballot-papers counted to the defeated candidate are then distributed among the non-defeated candidates next in order of the voters's preference. After such distribution, the number of votes given to each non-defeated candidate is again ascertained. If no candidate then has an absolute majority of votes, the process of declaring the candidate who has the fewest votes to be defeated, and distributing his ballot-papers among the non-defeated candidates next in order of the voter's preference, is repeated, and the votes recounted after every such redistribution until one candidate has obtained an absolute majority of votes, and is declared elected.

A ballot-paper is treated as informal if it does not indicate the elector's first preference for one candidate, and, in the case of any election where there are more than two candidates, the contingent votes for all the remaining candidates.

If on any count, two or more candidates have an equal number of votes, and one of them has to be declared defeated, the Returning Officer is required to decide which is to be declared defeated, and, if on the final count, each candidate has an equal number of votes, the Returning Officer is further required to give a casting vote, and so decide the election.

4. Queensland.—A modified system of optional preferential voting for the Legislative Assembly is in operation in Queensland, under the provisions of Section 78A to 78J inclusive of "The State Elections Act 1885 to 1908."

The elector is required to strike out from his ballot-paper the names of the candidates for whom he does not intend to vote, and then may, if he thinks fit, indicate on his ballot-paper the name or names of any candidates for whom he does not vote in the first instance, but for whom he desires his vote or votes to be counted in the event of any candidate or candidates for whom he votes in the first instance not receiving an absolute majority of votes, and if he indicates more than one such candidate, may indicate the order in which he desires that his vote or votes shall be counted for any such candidate or candidates. Such indication must be made by writing the figures 2, 3 or any subsequent number opposite to the name or names of the candidate or candidates for whom he does not vote in the first instance, but for whom he desires his vote or votes to be so counted, and the order indicated by such numbers is taken to be the order in which he desires his vote or votes to be so counted.

When one member only is to be returned at the election, if there is no candidate who receives an absolute majority of votes, all the candidates except those two who receive the greatest number of votes are declared to be defeated candidates. The vote of every elector who has voted for a defeated candidate is counted for that one (if any) of the remaining two candidates for whom he has indicated that he desires his vote to be counted. The vote so counted for such remaining candidates is added to the votes originally given for them, and the candidate who receives the greatest number of votes, including the votes so counted (if any) is declared elected.

When two members are to be returned, and there are not more than four candidates, the two candidates who receive the greatest number of votes are declared elected. When two members are to be returned, and there are more than four candidates, if there is no candidate who receives an absolute majority of votes, all the candidates except those four who receive the greatest number of votes are deemed defeated candidates.

The vote or votes of every elector who has voted for a defeated candidate or defeated candidates must be counted for that one or those two of the remaining four candidates for whom the elector has not voted in the first instance, but for whom he has indicated in the required manner that he desires his vote or votes to be counted. The votes so counted for such remaining candidates are added to the votes originally given for them. and the candidates who receive the greatest number of votes, including the votes so counted (if any), are declared elected.

If only one candidate receives an absolute majority of votes, he is declared elected. and in that case all the other candidates except those two who receive the next greatest number of votes are deemed defeated candidates. The vote of every elector who has voted for a defeated candidate is counted for that one (if any) of the remaining two candidates for whom the elector has not voted in the first instance, but for whom he has indicated in the required manner that he desires his vote to be counted. The votes so counted for such remaining candidates are added to the votes originally given for them, and the candidate who receives the greatest number of votes, including the votes so counted (if any), is declared elected.

When two or more candidates, neither of whom is elected, receive an equal number of votes, the Returning Officer decides by his casting vote which of them have or has the greatest number of votes. If an elector writes a figure opposite to the name of a candidate for whom he votes in the first instance, the ballot-paper is not rejected for that reason only.

The foregoing provisions for securing the absolute majority of votes do not apply to any election at which more than two members are to be elected for one Electoral District.

5. Western Australia.—Preferential voting was made compulsory in this State (where it had previously been optional) under the Amending Electoral Act of 1911.

The elector is required to mark his ballot-paper by placing the numeral 1 opposite the name of the candidate for whom he votes as his first preference, and if there are more than two candidates, to give contingent votes for all the remaining candidates by placing the numerals 2, 3 and so on (as the case requires) opposite their names, so as to indicate by such numerical sequence the order of his preference. At the scrutiny a ballot-paper is rejected as informal if, when there are more than two candidates, it is not marked so as to indicate by numerical sequence the voter's preference as regards *all the candidates*, subject to the proviso that if numerals in arithmetical sequence are placed opposite the names of all the candidates but one, the next following numeral is deemed to be placed opposite the name of the remaining candidate. A special provision also avoids the rejection of a ballot-paper by reason of the fact that the elector has indicated his vote or first preference by means of a cross instead of the numeral 1.

The candidate who receives the largest number of first preference votes is declared elected if such number constitutes an absolute majority of votes; but if no candidate has an absolute majority of votes, the Returning Officer declares the candidate who has obtained the fewest first preference votes to be a defeated candidate, and each ballot-paper counted to him is then (unless exhausted) distributed among the non-defeated candidates next in order of the elector's preference. When a candidate is declared defeated, any ballot-paper counted to him is deemed to be exhausted if there is not indicated upon it a consecutive preference for a candidate not declared defeated. After such distribution the number of votes given to each non-defeated candidate is again ascertained, and if no candidate then has an absolute majority of votes, the process of declaring the candidate who has the fewest votes to be defeated and distributing each of his ballot-papers (unless exhausted) amongst the non-defeated candidates next in order of the voter's preference is repeated, and the votes recounted after

every such distribution, until one candidate has obtained an absolute majority of votes, when such candidate is declared duly elected. When only two candidates remain undeclared, and neither has obtained an absolute majority, the candidate who has obtained the largest number of votes is declared to be elected. Every ballot-paper not rejected as informal is counted in every count until it becomes exhausted, when it is rejected in all further counts.

If on any count two or more candidates have an equal number of votes, and one of them has to be declared defeated, the Returning Officer is required to decide which is to be declared defeated, and is required to give a casting vote in the event of an equality of votes on the final count; but otherwise he may not vote at the election.

6. Tasmania.—The State of Tasmania is distributed into five electorates for the purposes of House of Assembly Elections, and each electorate returns six members, who are elected under a system of proportional representation. In a general election the elector is required to mark his ballot-paper by placing within, or substantially within, the squares respectively opposite the names of three candidates the numbers 1, 2, and 3, so as to indicate the order of his preference. He may, in addition, indicate the order of his preference for as many more candidates as he pleases, by placing within, or substantially within, the squares respectively opposite their names, other numbers next in numerical order after those already used by him.

The rules under which the scrutiny of the ballot-papers is conducted require that—

(A) The number of first choices recorded for each candidate shall be counted, and all informal voting-papers shall be rejected.

(B) The aggregate number of such first choices shall be divided by one more than the number of candidates required to be elected, and the quotient increased by one, disregarding any remainder, shall be the quota, and (except as hereinafter provided in Rule J) no candidate shall be elected until he obtains a number of votes equal to or greater than the quota.

(C) Any candidate who has, upon the first choices being counted, a number of such votes equal to or greater than the quota shall be declared elected.

(D) Where the number of such votes obtained by any candidate is equal to the quota, the whole of the voting-papers on which a first choice is recorded for such elected candidate shall be set aside as finally dealt with.

(E) Where the number of such votes obtained by any candidate is in excess of the quota, the proportion of votes in excess of the quota shall be transferred to the other candidates not yet declared elected, next in the order of the voter's respective preferences, in the following manner:—

- (i.) All the voting papers on which a first choice is recorded for the elected candidate shall be re-examined, and the number of second choices, or (in the case provided for in Rule L) third or next consecutive choices, recorded for each unelected candidate thereon shall be counted.
- (ii.) The surplus of the elected candidate shall be divided by the total number of votes obtained by him on the counting of the first choices, and the resulting fraction shall be the transfer value.
- (iii.) The number of second or other choices, ascertained in paragraph (i.) to be recorded for each unelected candidate, shall be multiplied by the transfer value.
- (iv.) The resulting number, disregarding any fractional remainder, shall be credited to each unelected candidate, and added to the number of votes obtained by him on the counting of the first choices.

(F)—(a) Where, on the counting of the first choices or on any transfer, more than one candidate has a surplus, the largest surplus shall be first dealt with. If then more than one candidate has a surplus, the then largest surplus next in order of magnitude shall be dealt with, and so on. Provided that, if one candidate has obtained a surplus at a count or transfer previous to that at which another candidate obtains a surplus, the surplus of the former shall be first dealt with.

(b) Where two or more surpluses are equal, the surplus of the candidate who has the highest on the poll at the count or transfer at which they last had an unequal number of votes shall be first dealt with, and if they have had an equal number of votes at all preceding counts or transfers, the Returning Officer shall decide which candidate's surplus shall be first dealt with.

(G)—(a) Where the number of votes obtained by a candidate is raised up to or above the quota by a transfer as aforesaid, he shall thereupon be declared elected. And in such case, notwithstanding the fact that he may have reached the quota, such transfer shall be completed, and all the votes to which he is entitled therefrom shall be transferred to him, but no votes of any other candidate shall be transferred to him.

(b) Where the number of votes obtained by a candidate is raised up to, but not above the quota by a transfer as aforesaid, the whole of the voting-papers on which such votes are recorded shall be set aside as finally dealt with.

(c) Where the number of votes obtained by a candidate is raised above the quota by a transfer as aforesaid, his surplus shall be transferred to the candidates next in the order of the voter's respective preferences, in the following manner:—

- (i.) The voting-papers on which are recorded the votes obtained by the elected candidate in the last transfer shall be re-examined, and the number of third, or (in the case provided for in Rule L) next consecutive choices recorded for each unelected candidate thereon counted.
- (ii.) The surplus of the elected candidate shall be divided by the total number of voting-papers mentioned in paragraph (i.), and the resulting fraction shall be the transfer value.
- (iii.) The number of second (or other) choices, ascertained in paragraph (i.) to be recorded for each unelected candidate, shall be multiplied by the last-mentioned transfer value.
- (iv.) The resulting number, disregarding any fractional remainder, shall be credited to each unelected candidate, and added to the number of votes previously obtained by him.

(H)—(a) Where, after the first choices have been counted and all surpluses (if any) have been transferred as hereinbefore directed, no candidate, or less than the number of candidates required to be elected, has or have obtained the quota, the candidate who is lowest on the poll shall be excluded, and all the votes obtained by him shall be transferred to the candidates next in the order of the voter's respective preferences, in the same manner as is directed in Rule E.

(b) The votes obtained by such excluded candidate as first choices shall first be transferred, the transfer value of the vote in each case being 1.

(c) The other votes of such excluded candidate shall then be dealt with in the order of the transfers in which, and at the transfer value at which, he obtained them.

(d) Each of the transfers which takes place under the two previous clauses of this rule shall be deemed for all purposes to be a separate transfer.

(1)—(a) Where the number of votes obtained by a candidate is raised up to or above the quota by any such transfer as aforesaid, he shall thereupon be declared elected. And in such case, notwithstanding the fact that he may have reached the quota, such transfer shall be completed, and all the votes to which he is entitled therefrom shall be transferred to him, but no other votes shall be transferred to him.

(b) Where the number of votes obtained by a candidate is raised up to, but not above, the quota by any such transfer as aforesaid, the whole of the voting-papers on which such votes are recorded shall be set aside as finally dealt with.

(c) Where the number of votes obtained by a candidate is raised above the quota by any such transfer as aforesaid, his surplus shall be transferred to the candidates next in the order of the voter's respective preferences in the same manner as is directed in Rule G, Clause (c). Provided that such surplus shall not be dealt with until all the votes of the excluded candidate have been transferred.

(d) Where any surplus exists it shall be dealt with before any other candidate is excluded.

(j) The same process of excluding the candidate lowest on the poll, and transferring to other candidates his votes shall be repeated until all the candidates, except the number required to be elected, have been excluded, and the unexcluded candidates, who have not already been so declared, shall then be declared elected.

(K) Where at any time it becomes necessary to exclude a candidate, and two or more candidates have the same number of votes and are lowest on the poll, then whichever of such candidates was lowest on the poll at the last count or transfer at which they had an unequal number of votes shall be first excluded, and if such candidates have had an equal number of votes at all preceding counts or transfers, the Returning Officer shall decide which candidate shall be first excluded.

(L) In determining what candidate is next in the order of the voter's preference, any candidates who have been declared elected or who have been excluded shall not be considered, and the order of the voter's preference shall be determined as if the names of such candidates had not been on the voting-paper.

(M) Where on any transfer it is found that on any voting-paper there is no candidate opposite whose name a number is placed, other than those who have been already either declared elected or excluded, such voting-papers shall be set aside as exhausted.

Where in the case of a by-election one candidate only is to be elected and no candidate on the first count secures an absolute majority of the whole of the formal votes recorded at the election, the candidate who has the fewest votes is excluded (i.e., regarded as defeated), and each ballot-paper counted to him is (unless exhausted) counted to the unexcluded candidate next in the order of the voter's preference.

If no candidate then has an absolute majority of votes, the process of excluding the candidate who has the fewest votes and counting each of his ballot-papers (unless exhausted) to the unexcluded candidate next in the order of the voter's preference is repeated until one candidate has an absolute majority of votes.

Every ballot-paper not rejected as informal is to be counted in every count until it becomes exhausted, when it is rejected in all further counts. Where a candidate is excluded, any ballot-paper counted to him is deemed to be exhausted if there is not indicated upon it a consecutive preference for one unexcluded candidate.

If on any count two or more candidates have an equal number of votes and any one of them has to be excluded, the Returning Officer decides which shall be excluded, and if in the final count two candidates have an equal number of votes, the Returning Officer decides by his vote which shall be elected, but otherwise the Returning Officer has no vote at the election.

A comprehensive report on the General Election for the House of Assembly held on the 30th April, 1909, furnished to the Government by Messrs. Douglas, Piesse, and Birchall (officers connected with the Administration), gives full details of the working of the proportional representation system in Tasmania, and may be studied with advantage by persons interested. The system just described in detail will be at once recognised as the "single transferable vote" system associated with the name of Thomas Hare.

7. Valuation of Commonwealth Production.

The want of uniformity in methods of compilation and presentation of Australian statistics renders it an extremely difficult task to make anything like a satisfactory valuation of the various elements of production. At present there is so little accurate statistical knowledge regarding such industries as forestry, fisheries, poultry, and bee-farming, that any valuation of the production therefrom can only be regarded as the roughest approximation. As a matter of fact complete information as to value of production in all States is available in regard to the mining industry alone, and even in this case adjustments have to be made before the returns are strictly comparable. Careful estimates have been made in connection with the value of production from the agricultural and pastoral industries, which, it is believed, in the main give fairly accurate results. In the case of manufactories, five of the States in 1908 collected statistics of the value of production, while for the sixth State, Tasmania, an estimate has been prepared which it is believed gives a fair approximation. While the difficulties in the way of obtaining adequate valuations for all classes of production are serious enough at the present time they are still more pronounced in seeking to obtain information as to values for earlier years, when the returns were far more incomplete. It must be clearly understood, therefore, that the values given in the succeeding table are, in general, approximations only. With the adoption of the forms and methods of tabulation agreed upon at the Statisticians' Conference of 1906 it is hoped, however, that at no distant date fairly complete valuations will be available for all industries, and the returns collected in 1909 and subsequent years certainly shew a considerable improvement over previous returns. In the meantime the figures quoted must be taken with all their limitations. The table hereunder shews the approximate value of the production from all industries during the years 1906 to 1911:—

ESTIMATED VALUE OF PRODUCTION FROM INDUSTRIES, 1906 to 1911.

Year.	Agriculture.	Pastoral.	Dairy, Poultry, & Bee-farming.	Forestry and Fisheries.	Mining.	Manufacturing.*	Total.
	£1000.	£1000.	£1000.	£1000.	£1000.	£1000.	£1000.
1906	25,349	45,389	13,611	4,879	26,622	†	†
1907	30,500	50,660	15,584	4,826	28,301	†	†
1908	37,150	47,259	15,045	4,286	24,580	36,637	164,957
1909	41,056	50,864	15,064	4,462	23,039	40,018	174,503
1910	39,752	56,993	17,387	4,789	23,215	45,598	187,734
1911	38,774	50,725	19,107	5,728	23,480	50,931	188,745

* These amounts differ from those given in Section XIII., Manufacturing Industries, owing to certain products which are there included having been included in Dairy Farming and Forestry in this table. † Full particulars not available.

The total production from all industries during 1911 was £188,745,000, equal to an average of £42 Os. 8d. per inhabitant.

In previous issues will be found the value of production in each State at decennial intervals since 1871, and for the year 1909. Details for individual States are not available for subsequent years owing to discontinuance by Customs Department of collection of statistics of inter-State trade.

The total value of production in the Commonwealth during 1911 was £188,745,000, the ratio between that year and 1871 being 4.04.

§ 8. Norfolk Island.

1. **Area, Location, etc.**—Norfolk Island, discovered by Captain Cook in 1774, is situated in latitude $29^{\circ} 3' 45''$ south, longitude $167^{\circ} 58' 6''$ east. Its total area is 8528 acres, the island being about 5 miles long and 3 miles wide. From Sydney it is distant 930 miles, and from New Zealand 400 miles. The coast line is 20 miles, and its form that of an irregular ellipse. Except on the south-west, inaccessible cliffs rise from the water's edge. Cocoanuts flourish, and native pine trees attain a magnificent size. The climate is equable, and the average annual rainfall 43 inches.

2. **Settlement.**—The first colonisation, in 1788, was by Lieutenant King, who in H.M.S. *Sirius* established a small penal station as a branch settlement of that at Port Jackson. The settlement was abandoned in 1806, and thence for 20 years its chief use was as a whaling station and place of call for British warships.

From 1826 to 1855 it was again made a penal station. In 1844 it was annexed to Van Diemen's Land (Tasmania).

The descendants of the *Bounty* mutineers having become too numerous to subsist on Pitcairn Island were removed thence to Norfolk Island in 1856. The new community numbered 193, 94 males and 99 females, and were the descendants of British sailors and Tahitian women.

In 1856 the island was severed from Tasmania, and created a distinct and separate settlement under the jurisdiction of New South Wales. In 1897 it was made a dependency under the Governor of that Colony, and is now administered by the Chief Secretary's Department through a resident Chief Magistrate, in whom is vested the executive government of the settlement, and the penal supervision of its affairs.

3. **Population.**—The census population (3rd April, 1911) was 568 males, 417 females, total 985.

4. **Production, Trade, etc.**—In 1912 the imports from the Commonwealth were valued at £7866, the exports at £1051. The chief articles sent to the Commonwealth were skins, £287; cocoanut oil, £399. There is little other production. A monthly steam service is maintained with Sydney; other communication is irregular. The "all red" cable from Great Britain *via* Vancouver, Fanning Island and Fiji, bifurcates at Norfolk, one line connecting with New Zealand, the other with Brisbane.

5. **Social Condition.**—Education is free and compulsory, and there is a public school under the State Department of Public Instruction, and with standards corresponding to the State public schools.

The magistrate's court has criminal jurisdiction in all crimes except capital offences, civil jurisdiction in all matters, and authority to grant probate and letters of administration.

Dealings with Crown lands are in the hands of the Governor alone.

§ 9. Lord Howe Island.

1. **Area, Location, etc.**—Between Norfolk Island and the Australian coast is Lord Howe Island in latitude $31^{\circ} 30'$ south; longitude $159^{\circ} 5'$ east. It was discovered in 1788. The total area is 3220 acres, the island being seven miles in length and from one half to one and three-quarter miles in width. It is distant 436 miles from Sydney. The flora is varied and the vegetation luxuriant, with shady forests, principally of palms and banyans. The highest point is Mount Garner, 2840 feet. The climate is mild and the rainfall abundant.

2. **Settlement.**—The first settlement was by a small Maori party in 1833; afterwards a colony was settled from Sydney. Constitutionally it is a dependency of New South Wales, and is supervised by a visiting magistrate.

3. **Population.**—The estimated population on 3rd April, 1913, was 56 males, 49 females, total 105.

4. **Production, Trade, etc.**—The principal product is the seed of the native or *Kentia* palms. A monthly steamship service is maintained with Sydney. The lands belong to the Crown. The occupants pay no rent, and are tenants on sufferance.

§ 10. Some Native Australian Fodder Plants.*

(Other than Grasses and Salt-bushes).

1. **Cruciferae.** This family includes such plants as cress, cabbage, etc. There are many Australian representatives, but most of them are very small. After the spring rains they may, however, be so numerous as to form quite a carpet of vegetation.

Lepidium ruderae Linn. *Lepidium papillosum* F.v.M.—These plants grow abundantly after rains, and are first-class fodder. Horses are able to work hard and keep their condition while subsisting principally on them. The plants constitute also a valuable stimulating diet for poultry, and the seeds are good for food. Both these plants are distributed widely throughout Australia.

2. **Capparidæ** (Caper Family). *Apophyllum anomalum* F.v.M.—A "Native Currant." Usually known as "Warrior Bush"—a corruption of the aboriginal name "Wareah." A useful fodder plant for stock; usually a bush growing from 6 to 10 feet high. Interior of New South and Queensland.

3. **Pittosporæ** (Pittosporum Family). (i.) *Pittosporum phillyræoides* D.C., called variously "Butter Bush," "Willow Tree," and "Native Willow." In times of scarcity this small tree is of great value as it withstands the drought, and sheep and cattle browse upon its foliage. Stock are so partial to it in the interior districts that it is in danger of extermination in some localities, and it should be conserved. The drier districts of all the States, except Tasmania.

(ii.) *Bursaria spinosa* Cav.: "Native Boxthorn."—This plant is greedily eaten by sheep, but its thorny character preserves it from extinction upon sheep runs. It is very variable in bulk. Usually a small shrub, in congenial localities it develops into a small tree. It is also valuable as a shelter for native grasses and other small fodder plants, which might otherwise be eaten out. Throughout Australia.

4. **Portulacaceæ** (Portulaca Family).—(i.) *Claytonia (Calandrinia) balonnensis*, Lindl: well-known as "Periculia" (sometimes spelt "Parakilya"), the aboriginal name in Central Australia. This and allied plants, such as *Portulaca*, go under the name of "Munyeroo." The occurrence or absence of this plant on the ridges often determines the route of mobs of cattle in the interior. Mr. S. Dixon, states that a large mob of cattle, destined to stock a Northern Territory run, travelled some 200 miles without a drink, which would have been absolutely impossible in the absence of this succulent plant.

* This article is contributed by J. H. Maiden, Esquire, F.L.S., Director of the Botanic Gardens, Sydney. In the "Forest Flora of New South Wales," by the same author, a number of plants are figured, and particulars given as to their forage value, for which there is not space in the present sketch.

Interior of South Australia, New South Wales, and Queensland. This may be taken as typical of a number of allied succulent plants, some of which are not without horticultural value.

(ii.) *Portulaca oleracea*, Linn: "Purslane," or "Pigweed"; "Munyerroo" of the aborigines.—This is the plant whose seed forms an article of food for the aborigines. They grind the seed in their stone-mills, and make a coarse kind of damper therefrom. It is a prostrate, succulent plant which stock devour readily; it is also reputed to be nutritious. It is one of those plants which are alike food and drink. Not endemic in Australia. Found in all the States except Tasmania.

5. **Malvaceæ** (Mallow Family).—(i.) Many plants belonging to this family are readily eaten by stock, and are nutritious, but they have the drawback, particularly when not young, of containing much fibre, and thus of becoming indigestible. None of these contain any acrid or poisonous substance.

(ii.) *Malvastrum spicatum*, A. Gray.—Some squatters have considered this a valuable sheep feed. (Bailey). It has been sent as a fodder plant from the Wilcanuia district. It is not endemic in Australia. South Australia, New South Wales, and Queensland.

(iii.) *Sida corrugata*, Lindl.—Sent as a good forage plant from the Parkes district. Other species of *Sida* (and *Abutilon*), other than enumerated, are doubtless of some value as fodder plants. All the States except Tasmania.

(iv.) *Sida rhombifolia*, Linn. (Syn.: *S. retusa*, Linn.) The well-known "Paddy Lucerne," or "Queensland Hemp." A well-known fodder plant in warm regions, including Queensland and northern New South Wales, and having some value in this direction, but a stunted plant in cooler parts, where it becomes a noxious weed. Queensland and New South Wales.

(v.) *Hibiscus heterophyllus*, Vent: "Green Kurrajong."—The leaves, branches, and bark of this tree, and of other species of *Hibiscus*, are greedily eaten by cattle in winter. They are mucilaginous, but especially fibrous. New South Wales and Queensland.

(vi.) *Gossypium Sturtii*, F.v.M.: "Sturt's Desert Rose."—This plant affords stock a good summer feed. (S. Dixon). Interior of South Australia and New South Wales.

6. **Sterculiaceæ** (Kurrajong Family).—*Sterculia diversifolia*, G. Don. (Syn.: *Brachychiton populneum*, R. Br.) The well-known "Kurrajong."—Cattle and sheep are fond of the leaves and branches, and in some dry seasons have existed for long periods on scarcely anything else. Nor is the attention of stock confined to these trees during droughts; the leaves are always palatable, but it must be borne in mind that no tree is ever preferred by stock to succulent grass. The kurrajong and quandong trees are exempted from the operations of all timber licenses and permits in New South Wales, and cutting them down is prohibited; but, in time of drought, if the leaves of the kurrajong tree are required for feed for stock, the lighter branches may be lopped. Victoria, New South Wales, and Queensland.

7. **Geraniaceæ** (Geranium Family).—*Geranium dissectum*, Linn: "Crowfoot" and *Erodium cynorum*, Nees.—Both prostrate plants, often found in grass land and in stony places. They are eaten by stock, and are supposed to be nutritious. In damp land of fair quality they yield an enormous quantity of feed. All States.

8. **Rutaceæ**.—*Geijera parviflora*, Lindl: "Wilga."—This is a small, very umbrageous tree of excellent shape. Sheep are fond of it, and keep it eaten off as high as they can reach.

9. **Meliaceæ** (Cedar Family).—(i.) *Flindersia maculosa*, *F.v.M.*: "Spotted Tree," "Leopard Tree."—During periods of drought sheep become exceedingly fond of the leaves of this tree, which they greedily devour, as well as the twigs up to the size of a goose-quill, and hence the tree is in danger of extermination, as it has not the recuperative power of some trees. This tree should only be pollarded. When young it forms a tangled mass, from which a leader emerges in the centre and forms the stem. This is a wonderful protective arrangement guarding the young tree from destruction by herbivora. Western New South Wales and Queensland.

(ii.) *Owenia acidula*, *F.v.M.*: The "Colane" or "Native Nectarine."—It has been claimed that this is the handsomest tree in the interior; certainly, it is a very beautiful, small tree, and one of the best of our fodder-trees. Found in the interior of South Australia, New South Wales, and Queensland.

10. **Rhamnææ**.—(i.) *Ventilago viminalis*, *Hook.*: "Supple Jack."—The leaves are eaten by stock. South Australia, New South Wales, and Queensland.

(ii.) *Pomaderris racemosa*, *Hook.*: The leaves of this shrub, when chewed or soaked, are found to be slightly mucilaginous. This explains the fondness that stock have for this plant. It always seems fresh and green, and stands stocking well. (S. Dixon.) It has been reported by other observers in South Australia as a fodder-plant, being much liked by stock of all kinds. The leaves of other shrubs belonging to the same genus have some value for stock feed. All the States, except Western Australia and Queensland.

11. **Sapindaceæ**.—(i.) *Atalaya hemiglauca*, *F.v.M.*: "Cattle Bush," "Whiterwood."—The leaves of this tree are eaten by stock, the tree being frequently felled for their use during seasons of drought. South Australia, New South Wales, and Queensland.

(ii.) *Dodonæa lobulata*, *F.v.M.*: "Hop-bush."—One of the best fodder shrubs in the Lachlan district of New South Wales. The seed-pods in particular contain a very pleasant bitter. There is no reason, however, to suppose that this particular species is preferred by stock to some others of the genus, which are scattered throughout all the States. Southern and Western Australia, New South Wales, and Victoria.

(iii.) *Heterodendron oleaefolium*, *Desf.*: "Rosewood" or "Lachlan Emu Bush." "Berrigan" is an old aboriginal name.—The seeds, which are covered with a red, fleshy arillus, are eaten by emus. Mr. S. Dixon states that both sheep and cattle feed greedily upon them. It is difficult to kill, springing from the roots when cut down, and it is one of the best for sheep feed. It grows to a girth of fifteen inches and more, and up to a height of twenty feet. All the States, except Tasmania (in the interior).

12. **Leguminosæ**.—Acacias are Wattles, most of them having special names. Some of these, which include the best fodder species, are given below.

(i.) *Acacia aneura*, *F.v.M.*: "Mulga."—By some called the "King of Fodders." Found in all the drier parts of all the mainland States.

(ii.) *Acacia doratoxylon*, *A. Cunn.*: "Spearwood," or "Currawang."—The leaves are eaten by stock. All the States except Tasmania and Western Australia.

(iii.) *Acacia implexa*, *Benth.*: A "Hickory."—In southern New South Wales cattle have been known to eat the leaves of this tree, stripping off all within reach, although grass in the paddock was abundant. The same remarks apply to other species, and it is desirable that further observations be made in regard to the fondness of stock for Acacias. Victoria, New South Wales and Queensland.

(iv.) *Acacia pendula*, *A. Cunn.*: "Weeping," or "True Myall." Called "Boree" in south-western districts of New South Wales.—With the exception of horses, stock, especially sheep, are very fond of the leaves of this tree, particularly in seasons of drought, and for this reason, and because they eat down the seedlings, it has almost become exterminated in parts of the States. New South Wales and Queensland.

(v.) *Acacia salicina*, *Lindl.*: "Native Willow," "Cooba," and "Motherumba."—The leaves are eaten by stock. This is another tree which is rapidly becoming scarce, owing to the partiality of stock to it. All the States except Tasmania.

(vi.) *Albizzia basaltica*, *Benth.*: (Albizzias are closely allied to Wattles.) "Dead Finish."—Cattle like the foliage of this tree. Queensland.

(vii.) *Albizzia lophantha*, *Benth.*—Cattle browse on the leaves of this tree. It is of rapid growth. Western Australia.

(viii.) *Cassia eremophila*, *A. Cunn.*—Mr. S. Dixon states that both the pods and the leaves of the plant are eaten by stock. All the States except Tasmania.

(ix.) *Daviesia* spp.: "Hop-bush."—Some of these shrubs are called "Hop-bushes" on account of the pleasant bitter principle which pervades them. Horses and cattle are fond of browsing on them.

Speaking of a dry time in southern New South Wales, Mr. Forester Allan reported that stock ate one species (*D. corymbosa*) ravenously, and it kept them alive. Chiefly in Western Australia, but also in New South Wales and other States.

(x.) *Galactia tenuiflora*, *Wight et Arn.*—Mr. Nicholas Holtze, of Port Darwin, states that horses are very fond of the foliage.

(xi.) *Glycine tabacina*, *Benth.* "A very fine fodder," called "Purple Clover," according to a correspondent in the Parkes district.

(xii.) *G. tomentosa*, *Benth.*—Has been similarly commended. Both species are found in South Australia, New South Wales and Queensland; the former in Victoria and Western Australia in addition.

(xiii.) *Jacksonia scoparia*, *R. Br*; var. *macrocarpa*: A "Dogwood."—Cattle and horses relish the foliage of this small tree amazingly. (Mueller.) Western Australia.

(xiv.) *Psoralea tenax*, *Lindl.*—Considered a good fodder by some. (Bailey.) New South Wales and Queensland.

(xv.) *Swainsona phacoides*, *Benth.*: "Indigo" or "Liquorice."—Considered a most valuable fodder plant in the Wagga district. The leaves of some species are injurious if eaten in excess; most of them are undoubtedly nutritious if browsed with grasses and other herbage. All the States except Tasmania.

(xvi.) *Templetonia egena*, *Benth.*—For a note of this species as a fodder-plant, see the *Gazette* for August, 1897. Found in the interior of all the States except Tasmania.

(xvii.) *Trigonella suavissima*, *Lindl.*—From its abundance in the neighborhood of Menindie it is sometimes called "Menindie Clover." It is the "Australian Shamrock" of Mitchell. This perennial, fragrant, clover-like plant is a good pasture herb. Sir Thomas Mitchell (*Three Expeditions*) speaks of it in the highest manner as a forage plant on several occasions. Interior of Australia, from the Murray River and tributaries to the vicinity of Shark's Bay, Western Australia.

19. *Myrtaceæ*.—(i.) *Angophora intermedia*, *D.C.*: "Narrow-leaved Apple-tree."—Victoria, New South Wales and Queensland.

(ii.) *Angophora subvelutina*, *F.v.M.*: "Broad-leaved Apple-tree."—Are sometimes cut down to feed cattle in dry seasons, as the leaves are relished by them. They are commonly pollarded for the same purpose. New South Wales and Queensland.

(iii.) *Eucalyptus coriacea*, A. Cunn: "White Gum," "Cabbage Gum."—The leaves of this tree are very thick, and in dry seasons are eaten by cattle. (Woolfs). Opossums have a predilection for the young foliage, so that they often kill trees of this species. Tasmania, Victoria, and New South Wales.

(iv.) *Eucalyptus corynocalyx*, F.v.M.: "Sugar Gum."—The sweetest foliage of this tree is browsed upon by cattle and sheep. In this respect this eucalypt may be classed with one other, *E. Gunnii*, (J. E. Brown). South Australia.

(v.) *Eucalyptus gunnii*, Hook, F.: "White Swamp Gum," or "Cider Gum."—This tree also bears the name of "Sugar Gum" because of the sweetness of the leaves, which consequently are browsed upon by stock. It is a common tree in Tasmania, where it is called "Cider Gum," as a so-called cider is made from the sap taken from it in the springtime. Tasmania, the extreme south-eastern portion of South Australia, thence to Gippsland, and into New South Wales.

(vi.) *Eucalyptus ochrophloia*, F.v.M.: "Napunya."—This small tree, which grows in the far western portions of New South Wales and Queensland, is a valuable fodder plant, sheep eating it greedily.

14. **Ficoldeæ.** *Trianthema crystallina*, Vahl.—This is a creeping succulent annual from 1 to 3 feet long. It forms an excellent fodder plant. This family includes "Pig's Faces" (*Mesembryanthemum*), New Zealand "Spinach" (*Tetragonia*), and other useful fodder plants. This plant is not endemic in Australia. In the interior of all the States except Victoria and Tasmania.

15. **Umbelliferae.**—*Daucus brachiatus*, Sieb.: "Native Carrot."—Stock are very found of this plant when it is young, and sheep especially thrive on it when it is abundant. It is a small annual herbaceous plant, growing plentifully on sandhills and rich soil. The seeds, termed "Carrot Burrs," are very injurious to wool, the hooked spines with which the seeds are armed attaching themselves to the fleece, rendering portions of it quite stiff and rigid. The root is astringent, but much relished by sheep. It grows in immense quantities on the rich black flats of flood deposit. To watch a flock of sheep feeding on carrot ground, where there is not a vestige of anything green, would astonish a stranger. A sheep will smell out a root and scrape away with its hoof until it can grasp the top with its teeth, when it draws it out. The common carrot belongs, of course, to this genus, and the fact that it is descended from an apparently worthless, weedy plant, indicates that the present species is capable of much improvement by cultivation. This plant is not endemic in Australia. All the States.

16. **Boraginææ.** *Trichodesma zeylanicum*, R. Br.—Baron Mueller recommends this plant as a fodder herb, stating that the dromedaries of Giles's exploring party (1873-4) were found to be particularly partial to it. It is not endemic in Australia. All the states except Victoria and Tasmania.

17. **Convolvulacæ.** (i.) *Convolvulus erubescens*, Sims: "Pink Convolvulus."—Esteemed a good fodder plant in places in western New South Wales. All the States.

(ii.) *Ipomœa Pes-Capræ*, Roth.—Mr. Nicholas Holtze, of the Botanic Gardens, Port Darwin, states that this plant is used as pig-feed by the Chinese of the Northern Territory. Found in Western Australia, New South Wales, and Queensland.

18. **Myoporinææ.** (i.) *Myoporum platycarpum*, R. Br.: "Dogwood," "Sandalwood."—The leaves are eaten by stock, but not, so far as can be learnt, with any evil effects. It is often felled for sheep in time of drought. All the States except Victoria and Queensland.

(ii.) *Eremophila longifolia*, *F.v.M.*: "Emu Bush," "Dogwood"; "Berrigan" of the natives.—The leaves are greedily eaten by cattle and sheep. Observations in regard to the effect on stock on browsing upon plants belonging to the *Myoporineæ* are much needed, as statements hitherto made in respect of them are not always reconcilable. Some of the plants of this family are, in fact, reputed to be poisonous. Allied to this plant is the "Sandalwood" or "Budtha" (*Eremophila Mitchelli*), the bark of which is very appetising to rabbits. Consequently they make for this shrub as soon as grass fails, and hence twigs of the "Budtha" are used (when treated with strychnine) as bait for rabbits. All the States except Tasmania.

(iii.) *Eremophila polyclada*, *F.v.M.*: "Lignum."—Useful fodder bushes. This and *Muhlenbeckia Cunninghamii* often grow together and go under the same name. All the States except Tasmania and Western Australia.

19. **Verbenaceæ.** *Avicennia officinalis*, *Linn.*: A "Mangrove" or "White Mangrove."—The leaves of this tree are eaten by cattle and are considered very nutritious. The mangroves are cut down by the teamsters for their cattle, and in many parts of the coast the cattle have done much harm to oyster beds through trampling them down in their efforts to reach the mangroves. The mangroves protect the banks of tidal rivers, etc., and are, in consequence, exempt from the operation of woodcutters' licenses. Around the greater part of the Australian coast.

20. **Polygonaceæ.** *Muehlenbeckia Cunninghamii*, *F.v.M.*: "Lignum." By some considered a useful fodder bush. All the States except Tasmania.

21. **Amarantaceæ.** *Ptilotus obovatus*, *F.v.M.*: "Silky Heads."—This plant grows on rough stony country, and is relished by all stock before it gets too dry and woolly. On the barren rocks it is frequently the principal food for stock. The same remark applies more or less to other species of this genus, which is scattered through much of the drier country. Found in the interior of all the States except Tasmania.

22. **Nyctagineæ.** *Boerhaavia diffusa*, *Linn.*: Often called "Tar-vine."—This is a useful forage plant, which, having a long tap root, can withstand a considerable amount of drought, whilst it affords a pasture early in the season, ere the grasses are fully developed. Stock are particularly fond of this plant; they seem to prefer it to all other kinds of feed available to them. This plant is not endemic in Australia, and is a troublesome weed in some warm countries. Mr. N. Holtze states that it is used for pig-feed by the Chinese of the Northern Territory. All the States except Tasmania.

23. **Proteaceæ.** *Hakea leucoptera*, *R. Br.*: "Pin or Needle Bush."—Eaten by stock. All the States except Tasmania and Western Australia.

24. **Euphorbiaceæ.** (i.) *Baloghia lucida*, *Endl.*: "Brush Bloodwood."—At Mount Dromedary this species has the reputation of being greedily eaten by cattle. A farmer cut the limbs of this tree down for his cattle, and they would always eat the leaves of it before anything else that was given to them. Coastal New South Wales and Queensland.

(ii.) *Bertya Cunninghamii*, *Planch.*: The "Gooma" of western New South Wales.—A fodder shrub which has no chance of making headway where sheep feed. In spite of the reputedly poisonous family to which it belongs, there is no record of it having proved deleterious to animals. It has a pleasant bitter flavour. Found in the drier parts of Victoria and New South Wales.

25. **Santalaceæ.** (i.) *Choretrum Candollei*, *F.v.M.*—Sent as an edible shrub from the Riverina. New South Wales and Queensland.

(ii.) *Fusanus acuminatus*, R. Br.: "Quandong."—A useful fodder-bush, protected from the operation of timber licenses. See *Sterculia diversifolia* (Kurrajong). Found in the interior of all the States except Tasmania.

26. **Urticææ.** *Ficus macrophylla*, Desf.: "Moreton Bay Fig."—This is an excellent fodder plant, cattle and horses eating the leaves, young twigs, and figs with great zest. The small-leaved fig (*F. rubiginosa*, Desf.), appears to be of equal value as a fodder plant, and doubtless other of our native figs may be put to similar uses. I have known cows fed all the year round on the leaves and figs which dropped from the trees.

27. **Casuarinææ.** (i.) *Casuarina Cunninghamiana*, Ait.: "Fresh Water Swamp Oak."

(ii.) *Casuarina glauca*, Sieb.: "Salt Water Swamp Oak."—I have seen cattle leaving fair grass for branches of these trees, and probably they will feed on the leaves of most *Casuarinas*. Found in all the States except Tasmania and Western Australia.

(iii.) *Casuarina stricta*, Ait.: "She-Oak."—This is a useful fodder tree in Victoria and southern New South Wales. Mr. S. Dixon states that in Port Lincoln (S.A.), the fallen catkins (male inflorescence) form the chief sustenance in winter on much of the overstocked country. He adds that this tree is too sour to be very useful to ewes rearing lambs; but if sheep had only enough of it, the "brake" or tenderness of fibre would often be prevented in our fine-wool districts, and much money saved by the increased value a sound staple always commands. The foliage is eagerly browsed upon by stock, and in case of drought these trees are pollarded for the cattle. Old bullock-drivers say that cattle prefer the foliage of the female plant. *Casuarina* foliage has a pleasant, acidulous taste, but it contains a very large portion of ligneous matter. All the States except Queensland and Western Australia.

28. **Balanophorææ.** *Balanophora fungosa*, Forst.—Speaking of Mount Bellenden Ker, Mr. F. M. Bailey records that this root parasite was noticed to be very abundant in all scrubs, producing usually large heads, some noticed being over 3 inches in diameter, and varying from nearly white to dark reddish-brown. Mr. Banning, of Freshwater Creek, says that bullocks are so eager to obtain a bite of it that it is often difficult to drive them through a scrub where it abounds. Queensland.

29. **Liliacææ.** *Flagellaria indica*, Linn.: A "Lawyer Vine."—Leichhardt (*Overland Journey to Port Essington*, p. 424), speaks of his bullocks feeding heartily upon this plant, particularly as the country was most wretched, and the grass scanty and hard. This plant is not endemic in Australia. New South Wales, Queensland, and North Australia.

30. **Marsiliacææ.** *Marsilea quadrifolia*, Linn.: "Nardoo," "Clover Fern."—This plant is much relished by stock. It grows plentifully in swamps and shallow pools of water. It is, however, better known as yielding an unsatisfactory human food in its spore-cases. All the States except Tasmania.

APPENDIX.

Recent information and returns which have come to hand since the various sections of this book were sent to press, are given in the pages immediately following.

SECTION II.

§ 8. Creation of the Commonwealth.

The Referendums of 1913. (See page 24).—The following are the proposed alterations of the Constitution of the Commonwealth, as submitted to the electors on the 31st May, 1913, the date of the General Election:—

1. Trade and Commerce.—Section 51 of the Constitution to be altered—

- (a) By omitting from paragraph (i.) the words "with other countries and among the States"; and
- (b) By adding at the end of paragraph (i.) the words "but not including trade and commerce upon railways the property of a State, except so far as it is trade and commerce with other countries or among the States."

2. Corporations.—Section 51 of the Constitution to be altered by omitting from paragraph (xx.) the words "Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth," and inserting in their stead the words—

"Corporations, including—

- (a) The creation, dissolution, regulation, and control of corporations;
- (b) Corporations formed under the law of a State, including their dissolution, regulation, and control; but not including municipal or governmental corporations, or any corporation formed solely for religious, charitable, scientific, or artistic purposes, and not for the acquisition of gain by the corporation or its members; and
- (c) Foreign corporations, including their regulation and control."

3. Industrial Matters.—Section 51 of the Constitution to be altered by omitting from paragraph (xxv.) the words "Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State," and inserting in their stead the words—

"Labour, and employment, and unemployment, including—

- (a) The terms and conditions of labour and employment in any trade, industry, occupation, or calling;
- (b) The rights and obligations of employers and employees;
- (c) Strikes and lockouts;
- (d) The maintenance of industrial peace; and
- (e) The settlement of industrial disputes."

4. Railway Disputes.—Section 51 of the Constitution to be altered by inserting after paragraph (xxv.) the following paragraph:—

("xxv.A) Conciliation and arbitration for prevention and settlement of industrial disputes in relation to employment in the railway service of a State."

5. Trusts.—Section 51 of the Constitution to be altered by adding at the end thereof the following paragraph:—

"(xl.) Trusts, combinations, and monopolies in relation to the production, manufacture, or supply of goods, or the supply of services."

6. Nationalization of Monopolies.—The Constitution to be altered by inserting, after section 51 thereof, the following section:—

"51A. (1) When each House of the Parliament, in the same session, has by resolution, passed by an absolute majority of its members, declared that the industry or business of producing, manufacturing, or supplying any specified services, is the subject of a monopoly, the Parliament shall have power to make laws for carrying on the industry or business by or under the control of the Commonwealth, and acquiring for that purpose on just terms any property used in connection with the industry or business.

(2) This section shall not apply to any industry or business conducted or carried on by the Government of a State or any public authority constituted under a State."

2. **The Referendums, 1913** (see also page 948).—Results of the voting on the six Referendums submitted to the electors on the 31st May, 1913, are shewn in the table hereunder. Final returns were not available at time of compilation of this sheet, but the figures given, which represent the result of the scrutiny as at noon on the 21st June, are sufficiently complete to shew that all the proposed alterations of the Constitution were negatived.

State.	1 Trade and Commerce.		2 Corporations.		3 Industrial Matters.	
	Yes.	No.	Yes.	No.	Yes.	No.
N. S. Wales...	304,924	348,589	303,659	351,811	303,473	350,770
Victoria ...	295,465	306,268	296,529	307,105	295,975	307,991
Queensland ...	139,487	118,472	140,055	119,447	140,332	119,196
S. Australia ...	96,011	90,818	96,260	90,886	96,575	90,804
W. Australia	53,991	49,856	53,073	50,157	53,064	50,200
Tasmania ...	34,122	41,352	34,183	41,631	34,323	41,584
C'wealth ...	924,000	955,355	923,759	961,037	923,792	960,545

State.	4 Railway Disputes.		5 Trusts.		6 Nationalisation of Monopolies.	
	Yes.	No.	Yes.	No.	Yes.	No.
N. S. Wales...	302,955	352,157	304,982	347,517	287,377	332,969
Victoria ...	294,355	309,229	300,092	303,415	285,624	295,550
Queensland ...	140,209	120,624	141,116	118,150	132,916	114,880
S. Australia ...	96,023	90,904	96,350	89,890	91,295	86,588
W. Australia	53,691	50,478	54,713	47,880	52,090	48,157
Tasmania ...	34,277	41,655	34,292	41,312	32,653	39,564
C'wealth ...	921,510	965,047	931,545	948,164	882,455	917,708

It will be seen from the above tables that while Queensland, South Australia, and Western Australia approved the proposed laws, New South Wales, Victoria, and Tasmania declared against them. Section 128 of the Commonwealth Constitution Act (see p. 37) provides, however, that any alteration of the Constitution must be approved by a majority of the electors in a majority of the States, as well as by a majority of all the electors voting, hence the proposals were rejected.

3. **Commonwealth Elections** (see also page 946).—Complete details of the voting at the elections on the 31st May, 1913, were not available at time of going to press. The results shewed, however, that 38 Opposition candidates had been returned to the House of Representatives as against 37 Ministerialists. The Prime Minister, the Right Hon. Andrew Fisher, tendered the resignation of his Government on the 20th June, and the Governor-General thereupon sent for the Hon. Joseph Cook, the leader of the Opposition, and entrusted him with the task of forming a new Administration. The personnel of the new Ministry was announced on the 24th June as follows:—

Prime Minister and Minister for Home Affairs	Hon. JOSEPH COOK.
Treasurer	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.
Attorney-General	Hon. WILLIAM HILL IRVINE, K.C.
Minister for Defence	Hon. EDWARD DAVIS MILLEN.
Minister for External Affairs	Hon. PATRICK McMAHON GLENN.
Minister for Customs	Hon. LITTLETON ERNEST GROOM.
Postmaster-General	Hon. AGAR WYNNE
Vice-President of the Executive Council	Hon. JAMES HIRS M'COLL.
Honorary Ministers	Hon. JOHN SINGLETON CLEMONS.
	Hon. WILLIAM HENRY KELLY.

4. Parliaments.—The members of the Fourth and Fifth Parliaments are given hereunder.

FOURTH PARLIAMENT (Dissolved 23rd April, 1913).

MEMBERS OF THE SENATE.

Barker, S. ...	Vic.	Gardiner, A. ...	N.S.W.	McDougall, A. ...	N.S.W.	Sayers, R. J. ...	Qld.
Blakey, A. E. H. ...	Vic.	Givens, T. ...	Qld.	McGregor, G. ...	S.A.	Shannon, J. W. ...	S.A.
Buzacott, R. ...	W.A.	Gould, Sir A. J. ...	N.S.W.	Millen, E. D. ...	N.S.W.	Stewart, J. C. ...	Qld.
Cameron, C. St. C. ...	Tas.	Guthrie, R. S. ...	S.A.	Needham, E. ...	W.A.	St. Ledger, A. J. J. ...	Qld.
Chataway, T. D. ...	Qld.	Henderson, G. ...	W.A.	O'Keefe, D. J. ...	Tas.	Story, W. H. ...	S.A.
Clemons, J. S. ...	Tas.	Keating, J. H. ...	Tas.	Pearce, G. F. ...	W.A.	Symon, Sir J. H. ...	S.A.
De Largie, H. ...	W.A.	Long, J. J. ...	Tas.	Rae, A. ...	N.S.W.	Turley, H. ...	Qld.
Findley, E. ...	Vic.	Lynch, P. J. ...	W.A.	Ready, R. K. ...	Tas.	Vardon, J. ...	S.A.
Fraser, S. ...	Vic.	M'Coll, J. H. ...	Vic.	Russell, E. J. ...	Vic.	Walker, J. T. ...	N.S.W.

MEMBERS OF THE HOUSE OF REPRESENTATIVES.

Anstey, F. ...	Vic.	Finlayson, W. F. ...	Qld.	Jensen, J. A. ...	Tas.	Riley, E. ...	N.S.W.
Archibald, W. O. ...	S.A.	Fisher, A. ...	Qld.	Johnson, W. E. ...	N.S.W.	Roberts, E. A. ...	S.A.
Atkinson, L. ...	Tas.	Forrest, Sir J. ...	W.A.	Johnson, W. J. ...	N.S.W.	Ryrie, G. de L. ...	N.S.W.
Bamford, F. W. ...	Qld.	Foster, F. J. ...	N.S.W.	Kelly, W. H. ...	N.S.W.	Salmon, C. C. ...	Vic.
Bennett, B. H. ...	N.S.W.	Foster, R. W. ...	S.A.	Livingstone, J. ...	S.A.	Sampson, S. ...	Vic.
Best, Sir R. W. ...	Vic.	Fowler, J. M. ...	W.A.	Lyne, Sir W. J. ...	N.S.W.	Seullin, J. H. ...	Vic.
Brennan, F. ...	Vic.	Frazer, C. E. ...	W.A.	Mahon, H. ...	W.A.	Sinclair, H. ...	Qld.
Brown, T. ...	N.S.W.	Fuller, G. W. ...	N.S.W.	Maloney, W. R. ...	Vic.	Smith, Bruce ...	N.S.W.
Cann, G. ...	N.S.W.	Glynn, P. McM. ...	S.A.	Mathews, J. ...	Vic.	Smith, W. H. L. ...	Tas.
Carr, E. S. ...	N.S.W.	Gordon, D. J. ...	S.A.	McDonald, C. ...	Qld.	Spence, W. G. ...	N.S.W.
Catts, J. H. ...	N.S.W.	Greene, W. M. ...	N.S.W.	McDougall, J. K. ...	Qld.	Thomas, J. ...	N.S.W.
Chanter, J. M. ...	N.S.W.	Groom, L. E. ...	Qld.	McWilliams, W. J. ...	Tas.	Thomson, J. ...	N.S.W.
Chapman, A. ...	N.S.W.	Harper, R. ...	Vic.	Moloney, P. J. ...	Vic.	Tudor, F. G. ...	Vic.
Charlton, M. ...	N.S.W.	Hedges, W. N. ...	W.A.	O'Malley, K. ...	Tas.	Watkins, D. ...	N.S.W.
Cook, J. ...	N.S.W.	Higgs, W. G. ...	Qld.	Ozanne, A. T. ...	Vic.	Webster, W. ...	N.S.W.
Deakin, A. ...	Vic.	Howe, R. ...	N.S.W.	Page, J. ...	Qld.	West, J. E. ...	N.S.W.
Edwards, R. ...	Qld.	Hughes, W. M. ...	N.S.W.	Palmer, A. C. ...	Vic.	Wise, G. H. ...	Vic.
Fairbairn, G. ...	Vic.	Irvine, H. W. H. ...	Vic.	Poynton, A. ...	S.A.	Wynne, A. ...	Vic.
Fenton, J. E. ...	Vic.	Irvine, W. H. ...	Vic.	Quick, Sir J. ...	Vic.		

FIFTH PARLIAMENT (Elected 31st May, 1913).

MEMBERS OF THE SENATE.

*Bakhap, T. J. K. ...	Tas.	*Gardiner, A. † ...	N.S.W.	Maughan, W. J. R. ...	Qld.	O'Loughlin, J. V. ...	S.A.
*Barker, S. † ...	Vic.	*Givens, T. † ...	Qld.	*McDougall, A. † ...	N.S.W.	*Pearce, G. F. ...	W.A.
*Barnes, J. ...	Vic.	*Gould, Sir A. J. ...	N.S.W.	*McGregor, G. † ...	S.A.	*Rae, A. ...	N.S.W.
*Blakey, A. E. H. † ...	Vic.	*Guthrie, R. S. † ...	S.A.	*Millen, E. D. ...	N.S.W.	*Ready, R. K. † ...	Tas.
*Buzacott, R. ...	W.A.	*Henderson, G. † ...	W.A.	*Mullan, J. ...	Qld.	*Russell, E. J. ...	Vic.
*Clemons, J. S. ...	Tas.	*Keating, J. H. ...	Tas.	*Needham, E. ...	W.A.	*Senior, W. ...	S.A.
*De Largie, H. ...	W.A.	*Long, J. J. † ...	Tas.	*Newland, J. ...	S.A.	*Stewart, J. C. † ...	Qld.
*Ferriicks, W. A. ...	Qld.	*Lynch, P. J. ...	W.A.	*Oakes, C. W. ...	N.S.W.	*Story, W. H. † ...	S.A.
*Findley, E. † ...	Vic.	*M'Coll, J. H. ...	Vic.	*O'Keefe, D. J. † ...	Tas.	*Turley, H. † ...	Qld.

MEMBERS OF THE HOUSE OF REPRESENTATIVES.

Abbott, P. P. ...	N.S.W.	Dankel, G. ...	S.A.	*Irvine, W. H. ...	Vic.	*Riley, E. ...	N.S.W.
Ahern, C. J. ...	Vic.	Falkiner, S. F. ...	N.S.W.	*Jensen, J. A. ...	Tas.	*Roberts, E. A. ...	S.A.
*Anstey, F. ...	Vic.	*Fenton, J. E. ...	Vic.	*Johnson, W. E. ...	N.S.W.	*Rodgers, A. S. ...	Vic.
*Archibald, W. O. ...	S.A.	*Finlayson, W. F. ...	Qld.	*Kelly, W. H. ...	N.S.W.	*Ryrie, G. de L. ...	N.S.W.
*Arthur, J. A. ...	Vic.	*Fisher, A. ...	Qld.	*Kendall, J. C. ...	Vic.	*Sampson, S. ...	Vic.
*Atkinson, L. ...	Tas.	*Fleming, Wm. ...	N.S.W.	*Livingstone, J. ...	S.A.	*Sharpe, J. B. ...	Qld.
*Bamford, F. W. ...	Qld.	*Forrest, Sir J. ...	W.A.	*Maloney, W. R. ...	Vic.	*Sinclair, H. ...	Qld.
*Bennett, J. ...	Vic.	*Foster, R. W. ...	S.A.	*Mathews, J. ...	Vic.	*Smith, Bruce ...	N.S.W.
*Best, Sir R. W. ...	Vic.	*Fowler, J. M. ...	W.A.	*McDonald, C. ...	Qld.	*Smith, W. H. L. ...	Tas.
*Boyd, J. A. ...	Vic.	*Frazer, C. E. ...	W.A.	*McGrath, D. C. ...	Vic.	*Spence, W. G. ...	N.S.W.
*Brennan, F. ...	Vic.	*Glynn, P. McM. ...	S.A.	*Manifold, J. C. ...	Vic.	*Stumm, J. ...	Qld.
*Burchell, R. ...	W.A.	*Greene, W. M. ...	N.S.W.	*McWilliams, W. J. ...	Tas.	*Thomas, J. ...	N.S.W.
*Burns, G. N. ...	N.S.W.	*Gregory, H. ...	W.A.	*O'Malley, K. ...	Tas.	*Thomson, J. ...	N.S.W.
*Carr, E. S. ...	N.S.W.	*Groom, L. E. ...	Qld.	*Orchard, R. B. ...	N.S.W.	*Tudor, F. G. ...	Vic.
*Catts, J. H. ...	N.S.W.	*Hannan, J. F. ...	Vic.	*Page, J. ...	Qld.	*Watkins, D. ...	N.S.W.
*Chapman, A. ...	N.S.W.	*Higgs, W. G. ...	Qld.	*Palmer, A. C. ...	Vic.	*Webster, W. ...	N.S.W.
*Charlton, M. ...	N.S.W.	*Howe, R. ...	N.S.W.	*Patten, R. ...	N.S.W.	*West, J. E. ...	N.S.W.
*Conroy, A. H. B. ...	N.S.W.	*Hughes, W. M. ...	N.S.W.	*Piggott, H. R. ...	N.S.W.	*Wynne, A. ...	Vic.
*Cook, J. ...	N.S.W.	*Irvine, H. W. H. ...	Vic.	*Poynton, A. ...	S.A.		

* Member of preceding Parliament. † Elected in 1910, and consequently the term of Senatorship had not expired.

SECTION IV.

POPULATION.

3 Post-Censal Adjustment of Population Estimates.

7. **Post-Censal Adjustment of State Populations, p. 117.**—Owing to the unsatisfactory nature of the returns received from the New South Wales railway authorities with respect to the migration by rail between that State and Victoria, it was found necessary at a late date to adjust the population figures of both States. The preparation of the section dealing directly with Population was held over to admit of the necessary adjustments being made, and the figures given therein may be accepted as correct and final. Considerations of time, however, rendered it impossible to delay the preparation of the other sections, and in consequence the rates and percentages for New South Wales and Victoria in the sections dealing with Vital Statistics, Pastoral Production, Agriculture, etc., and which are based upon population returns, have been prepared from the unadjusted figures and are subject to amendment. The alteration involved would, however, be a slight one, and would in most cases only affect the figures as given in the second decimal place.

§ 6. Elements of Growth of Population.

3. **Net Immigration, p. 125.**—The following table gives particulars of net immigration for the year 1912:—

NET IMMIGRATION,* 1912.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W.A.	Tas.	N. Ter.	Federal Capital Ter.	
Arrivals ...	365,716	276,716	102,493	109,035	38,326	46,669	846	†	166,958
Departures ...	317,666	254,464	100,014	104,860	31,732	46,739	585	†	83,217
Excess of arrivals over departures	48,050	22,252	2,479	4,175	6,594	—70	261	†—10	83,741

NOTE.— * signifies excess of departures over arrivals. * Figures for States and Territories represent Interstate, Interterritorial and Oversea migration; those for Commonwealth represent Oversea migration only. † Including Federal Capital Territory. ‡ Included with New South Wales migration.

5. **Total Increase, p. 128.**—The following table gives particulars of the total increase in population for each State and Territory and for the Commonwealth during the year 1912:—

TOTAL INCREASE OF POPULATION, 1912.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W.A.	Tas.	N. Ter.	Federal Capital Ter.	
Excess of births over deaths ...	32,999	19,207	11,817	7,743	5,354	3,796	—34	29	80,911
Excess of arrivals over departures	48,060	22,252	2,479	4,175	6,594	—70	261	—10	83,741
Total increase	81,059	41,459	14,296	11,918	11,948	3,726	227	19	164,652

NOTE.— * signifies excess of departures over arrivals.

§ 10. Enumerations and Estimates.

5. **Estimates of Population, pp. 139 to 141.**—The following table shews the estimated population of each State and the Commonwealth on the 31st December, 1912 :—

ESTIMATED POPULATION ON 31st DECEMBER, 1912.

Particulars.	States.						Territories.		C'with.
	N.S.W.	Vic.	Q'land.	S. Aust.	W.A.	Tas.	N. Ter.	Federal Capital Ter.	
Males ...	934,846	689,825	344,139	218,613	174,056	101,561	2,854	1,074	2,466,968
Females ...	842,688	690,736	292,286	211,477	132,073	95,644	621	866	2,266,391
Total ...	1,777,534	1,380,561	636,425	430,090	306,129	197,205	3,475	1,940	4,733,359

SECTION V.

VITAL STATISTICS.

§ 1. Births.

1. **Male and Female Births, p. 187.**—The total number of male and female births registered, and the birth rates per 1000 of the population in each State and Territory and in the Commonwealth, during the year 1912 were as follows :—

BIRTHS AND BIRTH RATES, 1912.

Particulars.	States.						Territories.		C'with
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Federal Capital Ter.	
Males ...	26,524	18,226	9,576	6,168	4,469	3,016	23	20	68,022
Females ...	25,337	17,570	9,162	5,911	4,220	2,837	10	19	65,066
Total ...	51,861	35,796	18,738	12,079	8,689	5,853	33	39	133,088
Birth rates ...	29.86	26.39	29.67	28.65	28.83	30.53	9.82	19.15	28.65

§ 2. Marriages.

1. **Marriages, p. 201.**—The following statement shews the number of marriages registered in each State and Territory and in the Commonwealth, and the marriage rates per 1000 of the mean population, during the year 1912 :—

MARRIAGES AND MARRIAGE RATES, 1912.

Particulars.	States.						Territories.		C'with
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.	Federal Capital Ter.	
No. of marriages	16,666	11,738	5,627	4,056	2,524	1,506	24	6	42,147
Marriage rates*	9.60	8.65	8.91	9.62	8.37	7.86	7.14	2.95	9.07

* Number of marriages, not persons married, per 1000 of mean population.

§ 3. Deaths.

1. **Male and Female Deaths, p. 208.**—The number of deaths registered in each State and Territory and in the Commonwealth during 1912, and the death rates per 1000 of the mean population, are shewn in the following table:—

MALE AND FEMALE DEATHS AND DEATH RATES, 1912.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Federal Capital Ter.	
Male ...	11,094	9,072	4,305	2,409	2,210	1,130	61	4	30,285
Female ...	7,768	7,517	2,616	1,927	1,125	927	6	6	21,892
Total ...	18,862	16,589	6,921	4,336	3,335	2,057	67	10	52,177
Death rates...	10.86	12.23	10.96	10.28	11.06	10.73	19.95	4.91	11.23

SECTION VIII.

AGRICULTURAL PRODUCTION.

§ 4. Wheat.

1. **Progress of Wheat Growing, p. 366.**—The following table shews the estimated area under wheat and the prospective yields of wheat in each State and the Commonwealth for the season 1912-13:—

ESTIMATED AREAS UNDER WHEAT AND PROSPECTIVE YIELDS, 1912-13.

Particulars:		N.S.W.	Vic.*	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
Estimated area ... Acres		2,177,648	2,085,216	111,369	2,229,890	788,349	19,196	7,411,668
Prospective yield ... Bush.		30,132,500	26,223,104	1,240,262	20,938,570	9,322,888	446,307	88,303,631
Average yield per acre ..		13.84	12.58	11.14	9.39	11.83	23.28	11.91

* Final figures.

SECTION XII.

MINES AND MINING.

§ 2. Gold.

2. **Production of Gold at Various Periods, p. 479.**—The Australian gold yield for 1912 is shewn in the subjoined table. The figures are open to final revision, but the totals will not be materially altered:—

GOLD RAISED IN AUSTRALIA, 1912.

Particulars.	States.						Territories.		C'wealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Northn. Terr.	Fd. Cap. Ter.	
Quantity Fine ozs.	165,395	480,131	347,946	6,592	1,282,658	37,973	5,337	...	2,325,933
Value ... £	702,129	2,039,464	1,477,979	28,000	5,448,384	161,300	22,671	...	9,879,927

SECTION XIV.

WATER CONSERVATION AND IRRIGATION.

§ i. Water Supply Works.

The Goldfields Water Supply in Western Australia, p. 575.—This branch of water supply is now under the control of the newly created Water Supply, Sewerage and Drainage Department (see also "Local Government," page 1001 *ante*). The gross revenue for the financial year 1911-12 was £243,521, and the working expenses £78,240, leaving a surplus available towards interest and sinking fund of £165,281. The outlay for interest and sinking fund charges, in respect of supplementary capital borrowed in debentures absorbed £23,650, leaving £141,631 payable to the State Treasury. During the financial year the State Treasury paid £168,813 interest and sinking fund on State loans in respect of these works, leaving a net deficiency of £27,182.

SECTION XVI.

SHIPPING.

§ 4. Vessels on the Register, 31st December, 1912 (p. 663).

State.	Steam-propelled.				Sailing.				Barge, Hulks, Dredges, etc., not self-propelled.		Total.	
	Dredges and Tugs.		Other.		Fitted with Auxiliary Power.		Other.					
	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.
N. S. Wales ...	43	1,541	585	97,382	73	1,299	362	32,057	56	8,724	1,119	141,008
Victoria ...	28	3,286	172	116,236	5	266	137	12,267	80	31,144	422	163,199
Queensland ...	25	2,600	79	12,493	16	164	154	3,149	41	5,861	315	24,267
Sth. Australia ...	23	748	93	47,752	2	55	99	4,131	72	12,769	289	65,455
W. Australia ...	10	145	45	20,288	1	100	308	5,821	22	2,455	386	28,809
Tasmania ...	4	295	60	8,227	18	523	133	5,886	5	2,112	220	17,043
Total* ...	133	8,615	1,034	302,378	115	2,407	1,193	63,311	276	63,065	2,751	*439,776

* Excluding the Northern Territory; on the 31st December, 1911, there were on the Port Darwin register 46 vessels aggregating 622 tons.

§ 7. Wages of Employees on Coastal Vessels (p. 670).

1. Masters and Navigating Officers.—By an order for prohibition granted by the High Court on the 13th December, 1912, the award of the President of the Commonwealth Court of Conciliation and Arbitration (25th April, 1912), by which the wages and conditions of employment of masters and navigating officers engaged in the coastal trade of the Commonwealth were determined, has ceased to have effect. The wages shewn on page 670 of this volume are, however, still being paid by the companies concerned.

2. **Engineers.**—The scale of wages to be paid per calendar month to engineers as shewn on page 671, has been superseded by an award which came into force on the 30th September, 1912. The wages under this award, which is to remain in force for five years, are as follows:—

Nominal Horse Power.	Chief Engineer.	2nd Engineer.	3rd Engineer.	4th Engineer.	5th-8th Engineer.
	£	£	£	£	£
Under 100 n.h.p. ...	22	17½	15½	...	...
100 or under 150 n.h.p. ...	23	17½	15½	...	...
150 or under 200 ...	24	19	16	...	...
200 ... 250 ...	26	20	17	14	12
250 ... 350 ...	28	20	17	14	12
350 ... 450 ...	30	21	18	15	12
450 ... 600 ...	32	22	18	15	12
600 n.h.p. or more ...	34	22	18	15	12

SECTION XVIII.

POSTS, TELEGRAPHS, AND TELEPHONES.

§ 3. Submarine Cables.

(i.) *New Zealand Cable*, p. 772. The laying of the new cable between New Zealand (Auckland to Sydney) was completed on the 24th December, 1912, and the cable was opened for traffic on the 31st December, 1912.

(ii.) *Press Cable Rates to Great Britain*, p. 774. The "through" charge for press cables was reduced, from the 26th September, 1912, from 9d. to 7½d. per word.

(iii.) *Week-End Cable Letters*. Since the 3rd January, 1913, week-end cable letters may be exchanged between the United Kingdom and Australia *via* Pacific and Eastern Extension Company's lines on the following conditions, viz.:—Week-end cable letters lodged or received at Pacific Cable Offices at Sydney or Southport and Eastern Extension Cable Company's offices at Adelaide or Perth up to midnight on Saturday for the United Kingdom will be transmitted between midnight on Saturday and Monday morning, other traffic being given preference. Week-end cable letters may also be lodged at any post office for transmission to those cable offices by post or, if so desired, by telegraph, provided in the latter case that a special rate as shewn hereunder be paid, in addition to cable charge. On arrival in the United Kingdom such cable letters will be delivered by post unless the senders desire them to be delivered by telegraph, in which case local rates as shewn hereunder must be paid in addition to cable charge. Week-end cable letters shall be written in plain language and shall be subject to the same rules and regulations as deferred ordinary telegrams, except that those which are to be delivered by post may not be addressed to a code address. Week-end cable letters received in Australia will be posted at the cable office so as to reach the addressee not earlier than 8 a.m. on Tuesday, unless arrangements have been made by the senders for them to be telegraphed to addressee for delivery on Tuesday morning. The charge for week-end cable letters shall be ninepence per word subject to a minimum charge of eighteen shillings per telegram when inland wires are not used in Australia or United Kingdom. The additional charge for telegraphing such week-end cable letters shall be the Commonwealth inland rates in Australia and one halfpenny per word in the United Kingdom. Week-end cable letters shall be free of postage in the same way as ordinary telegrams, provided they are enclosed in envelopes plainly endorsed "Week-end cable letters."

SECTION XXVIII.

DEFENCE.

§ 4. Commonwealth Defence Legislation (p. 1053).

3. Commonwealth Establishments.—(i.) *Factories.* The four factories established under the authority of the Act of 1909, in connection with the Defence Department, have commenced operations. The Commonwealth Harness, Saddlery, and Leather Accoutrements Factory at Clifton Hill, Victoria, was opened in September, 1911. On 1st March, 1913, there were 153 persons employed, including 19 females. A large quantity of harness and saddlery, and leather and canvas equipment has been turned out for the Defence and Postmaster-General's Departments. The factory is now able to cope with practically the whole of the requirements of these departments in the way of leather and canvas equipment. The Cordite Factory at Maribyrnong, Victoria, was designed to manufacture the small-arm ammunition required for military purposes. On 1st March, 1913, the employees numbered 86. The first output was in June, 1912, and the average output of finished cordite after the factory had been in operation six months was over $5\frac{1}{2}$ tons per month. The Clothing Factory at South Melbourne, Victoria, commenced operations on 3rd January, 1912. Since 1st July, 1912, a satisfactory output has been maintained. The number of employees on 1st March, 1913, was 403, of whom 332 were females. Extensions to the factory will provide accommodation for 300 more hands. It is expected that the establishment will be able to supply the whole of the uniform clothing required for the Defence Forces and the Postmaster-General's Department. The Small Arms Factory at Lithgow, N.S.W., was opened on 1st June, 1912. The first instalment of Australian arms was delivered in May, 1913, and it is expected that 7500 rifles, complete with all appurtenances, will be ready by the 30th June. Employees numbered 282 on 1st March, 1913. A fifth Commonwealth factory has been established for uniforms and woollen fabrics. A site has been secured at Geelong, Victoria, and the construction of the buildings commenced.

(ii.) *Expenditure.* The expenditure up to 30th June, 1912, in the purchase of land, machinery, and plant, factory fittings, and furniture in connection with the factories now in operation, was approximately as follows:—

Small Arms Factory...	£149,000
Cordite Factory	85,800
Clothing Factory	12,300
Harness Factory	6,500

It is estimated that the initial cost of establishing the woollen mills will be about £85,000.

(iii.) *Remount Depot.* Under the authority of the Act of 1910, remount depôts and grazing paddocks have been, or are being, obtained in each State, and 1500 horses have been purchased at an average cost of £25. Men are being enlisted to form a remount section of the Army Service Corps, for the purpose of breaking in and generally looking after the horses purchased. Manœuvre areas are also being acquired.

§ 5. The New Defence Scheme.

4. Compulsory Training in Operation (p. 1061).—At the end of April, 1913, the total registrations in training areas numbered 180,632; total medical examinations, 118,415; number medically fit, 107,962; percentage of those medically examined found fit, 91.2; number unfit and temporarily unfit, 10,453; total exemptions in training areas, 64,354; total number liable for training, 90,560. The total number actually undergoing military training was 87,490.

The number of junior cadets medically examined up to 30th April, 1913, was 54,418; of whom 53,141 (97.7 per cent.) were medically fit.

5. The Naval Scheme (p. 1065).—Cablegrams from London announce that the battle cruiser *Australia* will be commissioned on 16th June, 1913, and the cruiser *Sydney* on 20th June.

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* An index to special articles, etc., appearing in previous issues, is given at the commencement of this book, page viii.

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